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General Information

An Issue

of the

Bulletin of the

University of New Hampshire

VOL. XLV DECEMBER 1953 NO. 3

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UNIVERSITY OF NEW HAMPSHIRE

Calendar

Summer Session

1954

July 6	Tuesday	Summer Session registration
July 7	Wednesday	Classes begin at 7:30 a.m.
Aug. 13	Friday	Summer Session closes

First Semester

Sept. 13	Monday	First general Faculty meeting
Sept. 13	Monday	Orientation Week begins
Sept. 20	Monday	Classes begin at 8:00 a.m.
Nov. 15	Monday	Mid-Semester reports to be filed, 9:00 a.m.
Nov. 24	Wednesday	Thanksgiving recess begins at 12:00 noon
Nov. 29	Monday	Thanksgiving recess ends at 8:00 a.m.
Dec. 18	Saturday	Christmas recess begins at 12:00 noon

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Jan. 3	Monday	Christmas recess ends at 8:00 a.m.
Jan. 17	Monday	Examination Period
Jan. 28	Friday	

Second Semester

Jan. 31	Monday	Classes begin at 8:00 a.m.
Feb. 18	Friday	Winter Carnival — no classes Friday, 1:00 p.m. to Monday, 8:00 a.m.
Feb. 19	Saturday	
Mar. 8	Tuesday	Town Meeting, classes excused 10:00 a.m. to 2:00 p.m.
Mar. 28	Monday	Mid-Semester reports to be filed, 9:00 a.m.
Apr. 2	Saturday	Spring recess begins at 12:00 noon
Apr. 12	Tuesday	Spring recess ends at 8:00 a.m.
May 7	Saturday	Mothers' Day
May 23	Monday	Examination Period
June 3	Friday	
June 3	Friday	Alumni Weekend starts
June 5	Sunday	Commencement

General Information about the University of New Hampshire

Its History

FOUNDED IN 1866, the University of New Hampshire is one of the nation's land-grant colleges which were established by the Federal Morrill Act. The University had its beginning as a College of Agriculture and Mechanic Arts as a part of Dartmouth College in Hanover.

In 1892 the College was moved to its present site in Durham, to take advantage of the bequest of the estate of Benjamin Thompson, a prosperous farmer. He gave his land and money to the State on condition that an agricultural college be established on his Durham farm. Although the will was made in 1856, its terms were not disclosed until 1890, and by the time the estate became available in 1910, the gift in land and securities had grown from $300,000 to about $800,000.

Meanwhile, the State Legislature in 1890 took legal steps to establish the College at Durham, and in 1892 the Senior class enthusiastically held its commencement exercises in the first building which had been completed — a cow barn. Four other buildings were ready for use in 1893 by a group of 64 students, including four women.

Steady growth since that time has resulted in an educational institution recognized as one of America's great state universities. with an enrollment of 3,000 students and a physical plant of nearly 50 classroom and laboratory buildings and dormitories. In 1923 the State Legislature renamed the institution "The University of New Hampshire", creating within it the Colleges of Agriculture, Liberal Arts, and Technology.

Two years later permanent support for the University was provided by the Legislature in its enactment of legislation granting an annual income of one mill for each dollar of the assessed valuation of all taxable property in the State. Since then the mill tax legislation has been amended so that State support of the University amounts to about $1,400,000 annually.

Its Organization

The University is governed by a 13-member Board of Trustees. The Governor of the State, the Commissioner of Agriculture, and the President of the University are members *ex officiis;* eight members are appointed by the Governor; and two are elected by alumni.

Legislative jurisdiction in matters of student government and educational policy is held by the University Senate, a representative body of members of the Faculty. Within the Senate is the Faculty Council which acts in an advisory capacity to the President of the University.

Its Program of Instruction

Resident instruction is offered in the College of Agriculture, the College of Liberal Arts, the College of Technology, the Graduate School, the Summer Session, the Departments of Physical Education for Men and for Women, the Divisions of Military Science and Air Science, and the Thompson School of Agriculture. Detailed explanation of the instruction offered will be found starting on Page 38.

The University confers the following degrees:

College of Agriculture — Bachelor of Science in Agriculture, in Agricultural Engineering, in Forestry, and in Home Economics. In the Thompson School of Agriculture, a Certificate of Graduation.

College of Liberal Arts — Bachelor of Arts and Bachelor of Science.

College of Technology — Professional degrees of Mechanical Engineer, Civil Engineer, and Electrical Engineer; Bachelor of Science in Chemistry, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mathematics, in Mechanical Engineering, and in Physics.

Graduate School — Master of Arts, Master of Education, Master of Science, and Master of Science in Engineering.

Its Land and Buildings

University lands comprise approximately 2,300 acres. Lands at Durham total about 1,500 acres, of which the campus proper and athletic fields make up 170 acres. The remainder are in forest, orchards and gardens, hay and pasture, and ponds.

There are 24 buildings devoted to administration, instruction, and research, 16 dormitories for men and women students, an extensive farm system, and two buildings and several playing fields devoted to physical education and athletics for men and women. The buildings are described in the center section of this bulletin as a legend for the map of the campus.

Its Service to the State

In addition to its regular program of instruction, the University conducts an active program for the benefit of the people of the State

Hamilton Smith Library with Thompson Hall tower in the background.

in related fields of higher education, such as extension work and research.

The Cooperative Extension Service, with a staff of more than 65, operates in conjunction with the U. S. Department of Agriculture to disseminate information by means of demonstrations, meetings, the press, radio, and individual contacts. The Extension Service bridges the gap between the research done on the campus and the people of the State on their farms, in their homes, and in their communities.

The University Extension Service conducts an adult education program anywhere in the State where there is a demand, making available instruction on a college level. It takes its classes into industrial plants for a specialized technological instruction or it will conduct classes in cultural subjects in liberal arts. In addition this Service arranges for campus conferences and meetings of State and national groups, and it operates a library of educational films.

Research at the University is a continuing process in varied fields. The work is coordinated through the Council for Sponsored Research. Some research is conducted on an individual basis, that is, the specialist is under contract to an industrial firm or a government agency to do a specific project. But most of the work is carried on by three research units.

The Agricutural Experiment Station is concerned with solving the more important agricultural problems in an attempt to better rural life by bringing science to agriculture. Bulletins covering results of research are available for free distribution.

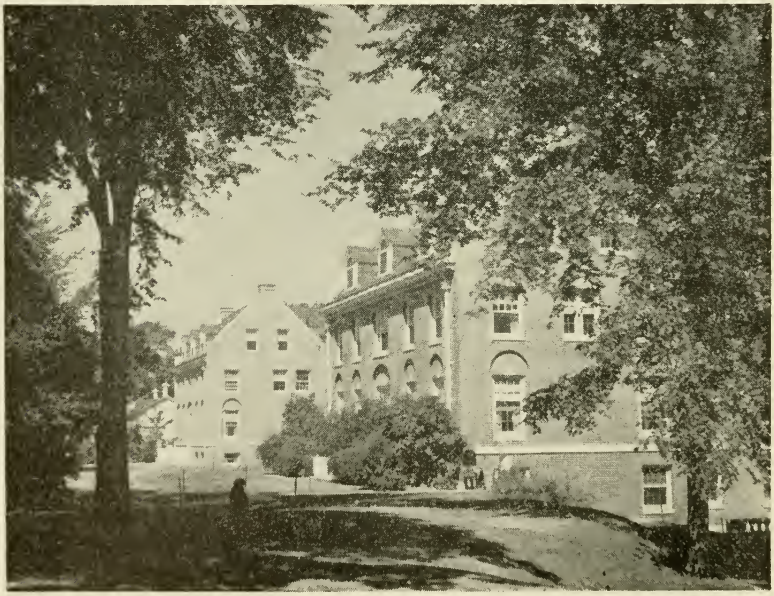
The Engineering Experiment Station provides engineering research facilities for the industries of the State and the State government. Although it does some independent research, much of its work is done in response to specific requests for technical assistance.

The Public Administration Service provides research facilities for government agencies of New Hampshire through the Department of Government, with assistance from other departments in the College of Liberal Arts.

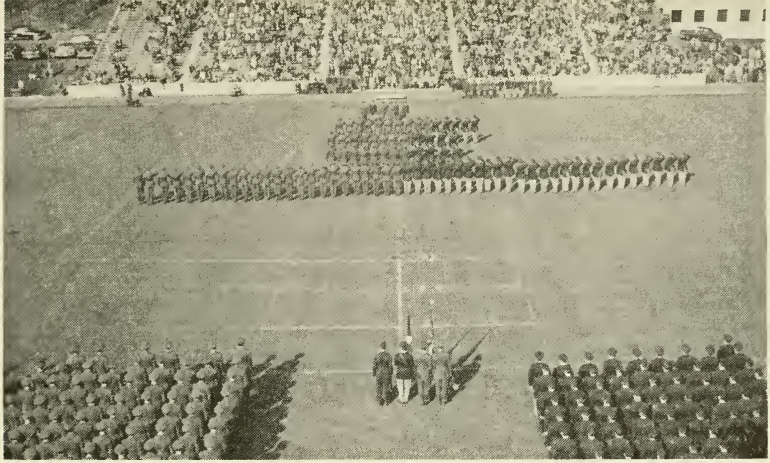
Its Cultural Opportunities

As important as the classrooms and laboratories may be, a great University would be incomplete without cultural activities outside the regular program of instruction. The University conducts a number of cultural functions, both for the benefit of students and faculty and for the people of the State.

The center of the University's cultural life is the Hamilton



Congreve Hall, one of six dormitories available for women students.



A crowd of spectators in Cowell Stadium watches a military review.

Smith Library where there are nearly 190,000 books and a collection of more than 2,200 phonograph records. The Library has a branch for plant and animal sciences in Nesmith Hall and one for chemistry in James Hall, and an engineering reading room in Kingsbury Hall. The Library is a U. S. Government Depository Library.

The University has several collections housed in various buildings. They include one which illustrates the zoology, geology, entomology, and Americana of New Hampshire; one devoted to more than 500 costumes dating from Revolutionary times; another to fabrics; an extensive china and glass collection; a bird collection; and one devoted to testing machinery used by a New Hampshire professor more than 50 years ago when he developed what is known as the Kingsbury thrust bearing.

An outstanding cultural program in music includes a number of concerts by student vocal and instrumental groups and recitals by several talented faculty members. In this same field the University sponsors a special concert series each year which brings professional musicians to the campus from the nation's opera and symphony halls. A 64-bell electronic carillon plays daily and Sunday concerts from the tower of Thompson Hall. The carillon, installed in 1952, is a memorial to the late registrar, Oren V. Henderson.

Drama is offered several times during the year by a capable student group, and there are many public lectures, both by faculty and off-campus speakers.

Through its Department of The Arts, the University displays a constant succession of loan exhibitions selected to appeal to a variety of interests. Some of these exhibits are shown in the Art Division of the Hamilton Smith Library; others in the Exhibition Corridor at Hewitt Hall.

Student Life on Campus

Student Personnel Services

University responsibilities for student activities and welfare outside the formal academic organization are coordinated through the Division of Student Personnel. The activities in this area include supervision of student health, counseling, living arrangements, employment service, maintenance of academic standards, and protection of personal standards of conduct.

A student is held responsible for such rules and regulations as may be published in the *Official Handbook for Students*, and he also must meet such new regulations as may be adopted subsequently by the University and made applicable to him.

The following administrative officers are concerned with the operation of the Division of Student Personnel:

Everett B. Sackett, *Dean of Students;* William A. Medesy and Dorothy F. Snyder, *Associate Deans of Students;* John A. MacDonald, M.D., *University Physician;* Daniel H. Deyoe, M.D., *Assistant University Physician;* Doris Beane, *University Recorder;* Donald H. Richards, *Director of Admissions and Director of Placement;* Paul H. McIntire, *Director of Counseling;* Warren C. Bower, *Psychologist;* Frederick M. Jervis, *Psychologist;* Kathleen Beckingham, *Counselor;* Herbert A. Carroll, *Counseling Clinical Psychologist;* Gerhard S. Nothmann, M.D., *Consulting Psychiatrist;* Harry R. Carroll, *Administrative Assistant;* Allison Q. Sanborn, *Director of Student Union;* Harriet B. Nason, *Supervising Nurse.*

Dean of Students

The Dean of Students coordinates the work of the student personnel officers with each other and with the other departments of the University. He is chairman of several administrative committees, including the committee which enforces the scholastic standing rules.

Associate Deans of Students

The two Associate Deans of Students work with the Dean of Students in the supervision of activities of all students at the University. In the office of the Associate Deans the plans for all social occasions requiring chaperonage are reviewed and rooms are assigned for evening meetings of student organizations. The Associate Deans are responsible for administering rules established by the University Senate and its subsidiary organizations. Assistance is given to students in making financial plans and securing financial aid, as well as in finding part-time employment during the college year.

The Associate Deans work closely with the other personnel agencies on campus, with the various colleges of the University, and with the residence halls and fraternities and sororities in order to allow each student to take fullest advantage of his college experience. Students having questions about any phase of college life are encouraged to discuss these questions with one of the Associate Deans.

Admissions Office

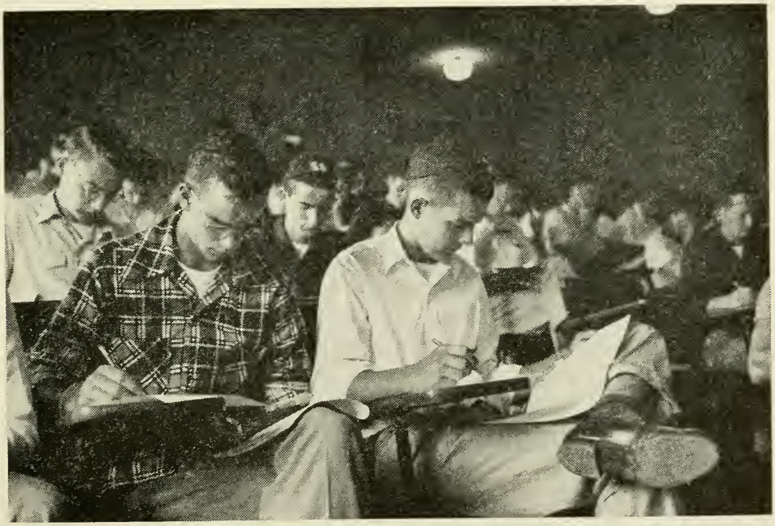
The function of the Admissions Office is to contact prospective college students, to process their applications, to correspond with them, to distribute bulletins and catalogues, and, finally, to select students. The Admissions Office is located in Thompson Hall, but a great deal of the contact work takes place in the high schools of the State.

School Testing Service

The School Testing Service is in the Counseling Service. Its chief function is to furnish the schools of the State the benefits of the University's trained personnel and testing facilities. The Service offers such programs as the High-School Survey, the Cooperative Guidance Program, as well as rental, scoring, consulting, and other professional technical services to the public schools of New Hampshire. Other programs are arranged to meet the needs of the schools.

Recorder's Office

The Recorder's Office conducts registration, maintains the academic records, issues grades and transcripts, checks the students'



New students take several guidance tests during Orientation Week.

Hi-U Day is an occasion for high-school students to visit the campus.

records and advises them of their progress toward graduation, makes up the student directory, Commencement lists, and honor rolls, and compiles other statistical data. Its services include an information desk and reception center. It is closely allied with the Admissions Office. Veterans' routine contacts with the Veterans' Administration regarding educational benefits are handled through this office.

Counseling Service

The Counseling Service, without cost, assists students in discovering vocational abilities and aptitudes, in self-evaluation, and in the development of sound plans and objectives. It furnishes students with occupational and educational information as to requirements and opportunities. Personal counsel and guidance are offered to those students facing problems of emotional and social adjustment. It is the University's official testing agency charged with the administration of large-scale testing programs such as the Graduate Record Examination, the Orientation Week program, and others of a similar nature.

Orientation Week was instituted at the University in 1924. Its purpose is to introduce new students to the University, its history and its traditions, and to help them to adjust rapidly and effectively to college life. During the week new students accomplish their program planning and registration and get to know faculty and fellow students. A series of tests are administered to all students during

Orientation Week. These tests are used later for guidance, advisement, and sectioning. Because of the proved importance of Orientation Week activities, all new students are required to be in attendance for the entire week.

Health Service

The University Health Service, located in Hood House, is devoted to the protection, improvement, and maintenance of student health. A well-equipped out-patient clinic for diagnosis and treatment of ambulatory patients and a modern hospital of 26 beds, with private and semi-private rooms, wards, and an isolation division for communicable diseases, are constantly available for students who require medical or surgical care. Registered nurses are on duty at all times. Individual health guidance is given through personal conferences with the University physicians.

Payment of tuition entitles students to all medical care rendered by the University Physician and his staff. Injury and illness which require hospital confinement other than in Hood House, services of specialists, operations, ambulance service, special nurse, or special prescriptions are at the expense of the student. Bed patients at Hood House are charged $2.00 per day. Office hours of the University Physician are from 8:00 A.M. to 4:30 P.M. daily except Saturday afternoons and Sundays.

Students' Medical Reimbursement Insurance

In addition to the health service available through Hood House, group accident and sickness insurance giving 12 months' coverage is available to students at the University. This insurance coverage is designed to supplement the program of the University. Complete details may be had on application to John C. Paige and Company, 40 Broad Street, Boston, Massachusetts.

Durham Notch Hall

This building serves as a temporary home for the Student Union, pending erection of the permanent Memorial Union building. It serves as a gathering place for students. Card games and ping-pong are available. The Student Union Board, on which there is student, faculty, and alumni representation, carries on an extensive cultural, social, and service program, paid for by an assessment of 75 cents a semester on each student. A soda fountain operates from early morning until late evening. Magazines and newspapers are provided.

Religious Activities

Opportunities are provided in Durham for students to practice religion and to participate in religious life. The Hillel Club, the Newman Club, and the United Protestant Association are the agencies through which the religious interests and life are fostered among the students. An administrative officer of the University serves as Coordinator of Religious Organizations.

The Durham Community Church welcomes students to its many services of worship, to Sunday evening programs, and to share church activities through student affiliated membership.

The Episcopal Church provides a chaplain for students, and services are held each Sunday.

The parish of St. Thomas More serves the Roman Catholic students and faculty members. Sunday Masses are held at 8:00 and 11:00 A.M.

Placement Bureau

The Placement Bureau assists seniors, graduate students, and alumni to secure positions after graduation. It corresponds with, and interviews, school superintendents, personnel managers of industrial concerns, and others who employ baccalaureate and advanced degree students, calling to their attention seniors, graduate students, and alumni who are seeking positions.

Military Service Affairs

The Director of Placement has been designated as the Administrator of Military Service Affairs for the University. In this capacity, he is the representative of the University in all matters concerning the Selective Service System and the branches of the Armed Forces. The Administrator acts in an advisory capacity to all students who have questions concerning military service. Students reaching their eighteenth birthday may complete the registration for Selective Service in his office.

Student Government

All undergraduate students are members of the "Student Government of the University of New Hampshire". The purposes of Student Government include promoting individual and collective responsibility among students, coordinating the activities of the student body and the faculty, and acting as the official representative body for the students. The work of the Student Government is carried on by the Student Senate, the members of which are elected to represent all housing units and the commuting students.

Subsidiary organizations include, in addition to the class organizations, Women's Inter-Dormitory Council, Men's Inter-Dormitory Council, Pan-Hellenic, and Inter-Fraternity Council. These organizations deal with matters of particular interest to their membership.

Students work together in administering their many groups and clubs.

Associated Student Organizations

This activity provides a central administration of business affairs for member organizations. A board of three faculty members and five students approves budgets of member organizations, recommends the amount of the Student Activities' assessment, and sets standards for, and supervises the financial activities of, member organizations.

Student Organizations

Special Interest Organizations

There are forty-one recognized student organizations for those interested in some special field, such as chemistry or sociology, or an activity, such as skiing and hiking, dramatics, radio, etc. In addition there are nine musical organizations.

National Honorary Societies

ALPHA EPSILON DELTA, Pre-Medical
ALPHA KAPPA DELTA, Sociology
ALPHA ZETA, Agriculture
ARNOLD AIR SOCIETY, Harl Pease Jr. Squadron, Military
KAPPA DELTA PI, Education
PHI BETA KAPPA, New Hampshire Beta Chapter
PHI KAPPA PHI, Highest-ranking Seniors selected from all Colleges
PHI SIGMA, Biology
PHI UPSILON OMICRON, Home Economics

Pi Gamma Mu, Social Science
Pi Mu Epsilon, Mathematics
Psi Chi, Psychology
Scabbard and Blade, Company F, Sixth Regiment, Military
Sigma Pi Sigma, Physics
Tau Beta Pi Association, Engineering
Tau Kappa Alpha, Debate and Oratory

Social Honorary Societies

Blue Key, Senior men
Mortar Board, Senior women
Senior Skulls, Senior men

Student Publications

The Granite is an illustrated annual published by the Senior Class.

The New Hampshire, weekly newspaper, presents campus news.

Religious Organizations

The Canterbury Club is an association of the Episcopal students on campus.

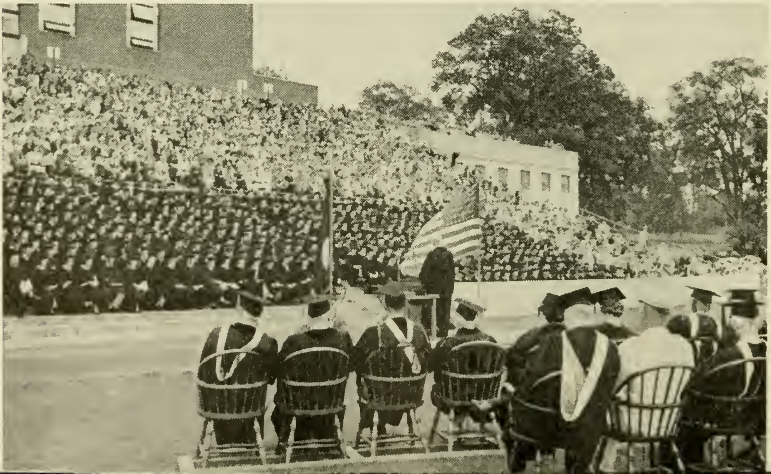
The Channing-Murray Club fosters the religious activities of Unitarian and Universalist students.

The Inter-Varsity Fellowship is an organization to stimulate interest in, and active support of, foreign and home missions and to encourage personal participation in the work of the Church of Christ.

A Christian Science organization welcomes all who are interested to its weekly testimonial services.

The Hillel Club is an organization to bring to Jewish students a more adequate knowledge of their heritage, and to foster friendship, cooperation, and understanding among the various re-

The Commencement program in June customarily fills Cowell Stadium.



ligious groups. Activities include religious services, holiday observances, discussion groups, and the maintenance of a library relative to Jewish study which is open to all students.

THE NEWMAN CLUB, an organization of Catholic culture and fellowship, fosters the spiritual, intellectual, and social interests of Catholic students. It is a member of the Newman Club Federation. Activities include corporate communions, discussion study groups, lectures, dramatics, parties, dances, etc. A Reading Room is provided in New Hampshire Hall.

PHANARION CLUB, for students of the Greek Orthodox Church.

THE UNH CHRISTIAN ASSOCIATION is an organization to provide a Protestant chaplain and to maintain an adequate program of activities for the developing of Christian life in the students of Protestant affiliation of the University and to cooperate in the inter-faith religious work of the campus. It is sponsored by The United Protestant Association, the Board of Directors of which is composed of representatives of Protestant churches in the State, parents of students, alumni, faculty, and students of the University, and the State YMCA and YWCA.

THE UNIVERSITY RELIGIOUS COUNCIL represents the cooperative religious work of the Hillel Club, the Newman Club, and the United Protestant Association. Projects include Religious Emphasis Week, recreation, radio programs, and publicity.

Fraternities and Sororities

FRATERNITIES* — Kappa Sigma, (1894) 1901; Sigma Alpha Epsilon, (1894) 1917; Theta Chi, (1903) 1910; Lambda Chi Alpha, (1906) 1918; Alpha Tau Omega, (1907) 1917; Phi Mu Delta, (1914) 1918; Pi Kappa Alpha, (1921) 1929; Sigma Beta, (1912); Phi Alpha, (1922) 1924; Theta Kappa Phi, (1922) 1923; Alpha Gamma Rho, (1923) 1924; Phi Delta Upsilon, (1924); Tau Kappa Epsilon, (1925) 1932; Acacia, (1949) 1949.

SORORITIES* — Chi Omega, (1897) 1915; Alpha Chi Omega, (1913) 1924; Alpha Xi Delta, (1913) 1914; Phi Mu, (1916) 1919; Kappa Delta, (1919) 1929; Theta Upsilon, (1926) 1930.

The Alumni Association

Upon leaving New Hampshire, students automatically become members of the Alumni Association. Reunions in June, Homecoming in fall, alumni clubs throughout the country, and a monthly magazine keep alumni up to date with University activities.

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*The year in parenthesis is the date of founding as a local; the other year is the date the local joined a national fraternity.

Methods of Admission

Regular Students

The University will admit without examination properly prepared New Hampshire students who are graduates of high schools or academies of New Hampshire which are approved by the State Board of Education, or those who are graduates of other accredited preparatory schools.

In-state applicants must have a scholastic record ranking in the upper two fifths of the graduating class in order to be eligible for admission without examination.

The number of out-of-state students admitted each year is limited by law to a small proportion of the entering class. Selection of out-of-state candidates is made primarily on the basis of superior academic achievement in secondary school, but such traits as character, leadership, and initiative will be taken into account. Because of the large number of New Hampshire students needing financial assistance in the form of employment, out-of-state applicants will be expected to give evidence of reasonable financial backing.

Applicants for admission are required to fill out an application form prepared by the University. Copies of this form may be obtained from secondary-school officials in New Hampshire or from the Director of Admissions.

An applicant for admission who is a resident of New Hampshire is required to remit a tuition deposit of $10 with his application. One from outside the State is required to remit $25. If the applicant is admitted to the University, his advance payment will be applied to the first semester's tuition; if he is not admitted, his advance payment will be returned. In the case of the applicant who is accepted for admission but does not enter or who withdraws after being accepted, the advance payment will not be returned. Remittance should be made either by check or by money order payable directly to the University of New Hampshire and should be sent with the application for admission.

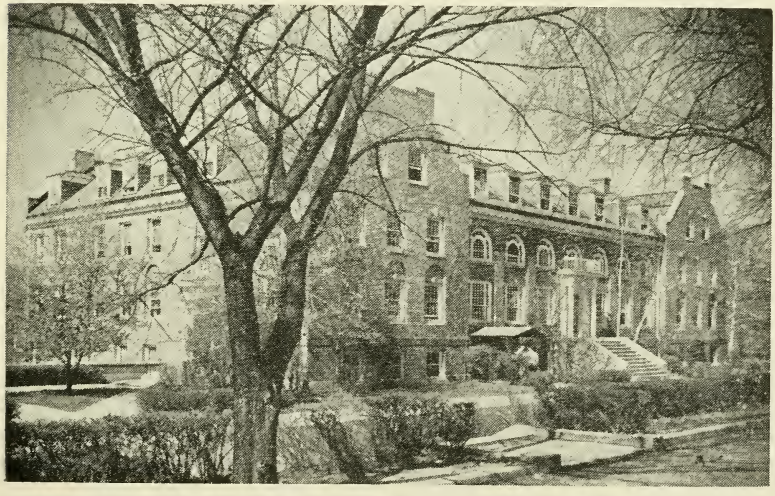
Applications for admission in September should not be made until a student has received grades for the first ranking period of the senior year in high school. To insure consideration before the out-of-state quota is filled, out-of-state students should file applications not later than the middle of March. To insure eligibility for financial aid and a choice of dormitory rooms, in-state students should apply during the spring. It is understood that the preparatory work of students applying during the spring will be completed successfully by the end of the school year. *No application will be considered which is not complete one week before the start of Orientation Week.*

Candidates for admission to the Freshman Class must show evidence that they are prepared in 15 units.

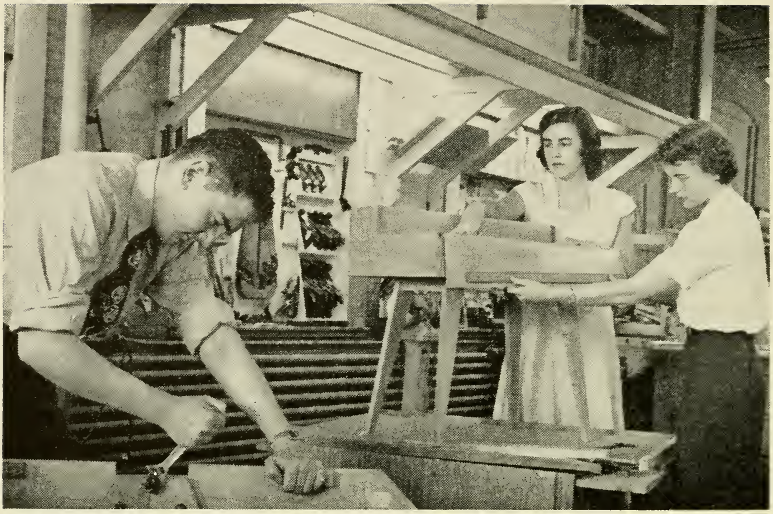
An entrance unit represents one course of four or five recitations a week for one year. It is assumed that two hours of shop or laboratory work are equivalent to one hour of classroom work.

Of the fifteen units required, each applicant for admission into the Freshman Class must present at least twelve units in college preparatory subjects, including at least three units of English, one unit of Natural Science, and one in Social Studies. In addition, students entering the *College of Agriculture* will be required to present two units of college-preparatory Mathematics. Students entering the *College of Liberal Arts* will be required to present two units of either a single Foreign Language or of college-preparatory Mathematics. Students enrolling in the *College of Technology* or electing Agricultural Engineering must offer at least three and one-half units of Mathematics, including Elementary and Intermediate Algebra and Plane and Solid Geometry. Commercial Arithmetic and Shop Mathematics are not classified as college-preparatory subjects.

Cases not covered by the above statements will be decided by the Committee on Admission.



Commons houses the Freshman dining hall and an upperclass cafeteria.



During free time students design and build in the Student Workshop.

Every candidate for admission claiming New Hampshire residence shall be required to complete a form which contains a statement to the effect that his parents are legally domiciled in the State of New Hampshire and that their names have appeared on the check list of the town or city of domicile for the entire past year. This statement must be notarized before an official authorized to administer oaths. Students admitted from foreign countries or states other than New Hampshire shall be deemed to be non-resident students throughout their entire attendance at the University unless and until the parents shall have gained *bona fide* residence in New Hampshire.

Students admitted to the University must present to the Director of the University Health Service completed medical history and physical examination reports before registration can be completed. The forms for this report are furnished by the University.*

Special Students

A person who has not been formally admitted as a candidate for a degree at the University, upon presenting evidence of his ability to carry successfully the desired courses, may be admitted as a special student. He may be required to demonstrate by examination or otherwise that he is qualified to undertake college work. Recent failure to maintain good academic standing in any college or university would be evidence of his inability to carry the work successfully.

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*Exemption from these requirements may be secured only through submission of a written statement from parent or guardian which indicates that the request is made because of religious beliefs.

In choosing his studies, the special student must have the approval each semester of the chairman of each department in which he elects courses and of the dean of the college in which he is taking a majority of his credits.

If a special student meets the usual requirements for admission as a candidate for a degree, he may, at the beginning of any semester by making the proper application, change from a "special" to a "regular" student status. A special student, who does not meet the usual admission requirements of the University, may be admitted as a regular student on the basis of completion of at least 26 semester hours of work with a minimum grade point average of 1.6 in all work taken as a special student. Such a special student must make the change at the beginning of the semester following the completion of the required 26 semester hours. Work taken as a special student shall count toward a degree, if the student later becomes classified as a regular student.

Advanced Standing

Qualified candidates for advanced standing from approved institutions may be admitted. Their status will be tentatively determined by the quantity and quality of the work completed at the institution from which they come. These credits are not made part of the permanent record until the student has completed at least one semester at the University of New Hampshire with a certain average. No transfer credit will be given for courses in which the student received the lowest passing grade.

(1) Such students must file the same application for admission as required of Freshmen. In addition, they must furnish, at least 30 days prior to the time of transfer to the University of New Hampshire, an official transcript of work done at institutions previously attended.

(2) All candidates for the Bachelor's degree, admitted to advanced standing, must spend their last year in residence, either in course or in Summer Session. This requires the completion of at least a quarter of the credits required for their degree.

(3) Regardless of the amount of advanced standing a student may secure, in no case shall he be granted a Bachelor's degree until he has satisfied the full requirements of the curriculum he may elect.

Expenses at New Hampshire

Tuition and Fees

The charge for tuition and fees is $250 per year for residents of New Hampshire and $500 for non-residents. Tuition and fees are itemized as follows: Tuition—$125 for residents of New Hampshire and $375 for non-residents. Fees—registration, $10; laboratory and library, $60; health and infirmary, $15; recreational facilities, $25; general University fee (incidentals), $15. Refundable deposits may be required to cover loss or breakage in certain departments. A charge will be made for individual lessons in music, as noted in the description of Applied Music courses.

Any student registering for 8 credits or more per semester shall pay the full tuition. Such payment entitles the student to admission to all home varsity athletic contests. Any student registering for less than 8 credits shall pay $10.00 per credit hour.

Explanation of Expenses

Tuition and Fees — Tuition and fees for each semester are payable in advance. Students who find it difficult or impossible to procure the necessary funds for the full amount due for a semester may make arrangements acceptable to the Treasurer for a series of payments during a semester.

Changes in Rates — The University reserves the right to adjust charges for such items as tuition and fees, board, and room rent from time to time. Such changes will be held to a minimum and will be announced as far in advance as feasible.

Advance Tuition Payment — An applicant for admission who is a resident of New Hampshire is required to remit $10 with his application; one from outside the State is required to remit $25. If the applicant is admitted to the University, his advance payment will be applied to the first semester's tuition; if he is not admitted, his advance payment will be returned. The advance payment of a student who is admitted, but does not enter, will not be returned.

Military Deposit — Uniforms for members of the Reserve Officers Training Corps are provided in cooperation with the Federal Government. A deposit of $15 is required of each student to whom military equipment is issued and is refundable, minus cost of lost or damaged articles, at the time of returning military equipment.

Athletic Locker Deposit — Every student participating in the programs of Physical Education and Athletics for Men and Physi-

Estimate of Freshman Expenses for a Year*

	High	*Average*	*Low*
Room (Dormitories)	$190	$160	$ 95
Board (at Commons)	280	280	280
Tuition and fees	250 (500)	250 (500)	250 (500)
Books	75	50	45
Laundry	40	25	15
Incidentals†	110	75	50
Total	$945 (1195)	$840 (1090)	$735 (985)

*Figures in parenthesis are for non-residents of New Hampshire.

†Expenses for travel, clothing, etc., vary with the individual student, and should be added.

cal Education for Women is required to deposit $1.00 for a locker. This will be refunded upon return of the lock to the equipment room, minus 25 cents per semester, to meet partially the expense of towel service.

STUDENT ACTIVITY TAX — The Student Activity Tax, authorized by vote of the Student Senate with the approval of the Board of Trustees, must be paid by each undergraduate at the time of registration. The revenue from the tax provides each student with *The New Hampshire,* student newspaper; *The Granite,* University annual; Student Union membership, Student Government membership, and class activities. The 1953-54 tax was $9.10.

BOOKS — Students may purchase books, classroom supplies, and other supplies at the University Bookstore in Thompson Hall.

ROOMS — The University has six dormitories for women and nine for men. All rooms are heated, lighted, and furnished. Bed linen, blankets, and towels, however, are provided by the individual student. Each women's dormitory is equipped with a laundry. A service room is provided in each dormitory where grills and irons may be used with safety. The rates for each dormitory are shown in the accompanying table. Applications for rooms in the dormitories should be addressed to the Manager, University Housing, Thompson Hall, University of New Hampshire, Durham.

Students living in University dormitories are required to sign room contracts covering the college year.

A five-dollar ($5.00) room deposit must accompany each application, this deposit to be forfeited if the room accepted is not occupied by the applicant. The deposit is held as a guarantee against damage and will be returned at the close of the year or upon the student's withdrawal.

Room rent is payable in advance. For the fall semester room rent must be paid not later than August 15, and for other semesters during the registration periods. Reserved rooms will be held only until August 15 unless the fall semester's rent is paid before that date.

Rooms paid for and not occupied one day after registration may be declared vacant and the room rent returned, unless the individual holding the reservation makes a written request to the Manager, University Housing, to hold the room until a later date. The advance payment for the room will not be returned to those making this special request. No room will be reserved for more than ten days after the registration date. Early application is necessary in order to secure a choice of rooms. Rooms in private houses may be secured for prices somewhat above those in University dormitories.

A woman student, who does not live at home, is required to room in one of the women's dormitories or a sorority house, unless she is working for her room in a private family. A competent house director is in charge of each women's dormitory.

Board — A dining hall is operated and supervised by the University for the accommodation and benefit of the students. All Freshmen, except those whose rooms and meals are provided at home or who are working for their meals, are required to board at the University Dining Hall for the first two semesters of attendance at the University. The aim of the compulsory regulation is to insure a broad fellowship and to safeguard the health of the first-year students by offering skilled dietetic supervision in selection and preparation of their food. The Dining Hall is equipped with the best appliances for cooking and serving on a large scale, and is subject to constant sanitary inspection by the University Physician. Board in

Modern dance is a popular offering in Women's Physical Education.

University Dormitories

Hall	Date Built	Number of Rooms Single	Number of Rooms Double	Price Per Student* Per Year Single	Price Per Student* Per Year Double
			Men		
Alexander	1951	13	64	$190	$170
College Road†	1946–7	4	26	120	100
East-West†	1918	1	116	115	95
Engelhardt	1946	22	42	145	125
Fairchild	1916‡	46	47	180	160
Gibbs	1946	22	42	145	125
Hetzel	1925	33	59	180	160
Hunter	1946	22	42	145	125
			Women		
Congreve North	1940	67	10	185	165
Congreve South	1920	61	47	175	155
Sawyer§	1951	7	60	190	170
Schofield House†§	1895¶	7	23	130	110
Scott	1932	49	36	180	160
Smith†	1908	13	28	130	110

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*If, on a date to be announced (approximately 30 days after the start of a semester), one student is occupying a double room he will be charged $10 extra for the semester. A student wishing to avoid this charge must inform his house director he wants reassignment. If on this same date a room is necessarily occupied above normal capacity, each occupant will receive a rebate of 20 percent of the semester room rent.

†Frame construction; Smith is brick veneered. All other dormitories are fire-resistant.
‡Renovated in 1951.
§Reserved for freshmen.
¶Remodeled and enlarged in 1943.

the Freshman Dining Hall in 1954-55 is expected to be $140 per semester, payable at registration for each semester.

The Dining Hall is not operated for profit. Savings made possible by reduced costs of operation are passed along to the students in the form of reduced board charges.

A cafeteria is open to all students of the upper classes who may desire to take advantage of the moderate price and the high quality of food available at the University Dining Hall. In the upperclass cafeteria 1953-54, 21-meal weekly tickets were $12.

PERSONAL CASH DEPOSIT — Students are urged to arrange personal checking accounts, or to place money on deposit in the Business Office until needed, in order to avoid possible loss resulting from keeping on hand considerable sums of money. Such banking arrangements will also facilitate payment at registration periods. The Business Office will accept and cash student checks.

Financial Aid For Students

The parents of many students at the University may find it a burden to bear the entire cost of four years of college education. This situation frequently is relieved in one or more of three ways: The student may help by working during the summer and in his spare time during the college year; the University or other organizations may grant a scholarship; the student may borrow from the University Loan Fund.

Student Work — During the college year, some students find employment as library assistants, assistants in instructional or research laboratories, counselors in dormitories, clerks in offices, workers in the dining halls, student janitors, and student workers on the University farms and about the campus. Others find employment in fraternities, sororities, and in stores and households in the community.

A student in good health and of good academic ability should be able to earn in the neighborhood of $150 by working about 10 to 12 hours a week during the college year. *Students who are in poor health or who encounter unusual difficulty in their studies may find it unwise to work. Students who are employed over 15 hours a week, unless they are unusually energetic, will discover that their studies are likely to suffer or that they must forego extra-curricular activities.*

A student who resides in New Hampshire should count upon having at least $400 to $500, either from summer earnings or other savings or promised by his family. Inability to raise this amount of money should not cause a capable student to give up his plans for a college education; but he should get in touch with an official of the University for help in working out the plans to insure his being able to complete his first year. Many unusually ambitious students, with no financial help from their families, are able to work their way through college. The problem of self-support may be discussed in a personal interview with the Director of Admissions, or inquiries on the subject may be addressed to the office of the Associate Deans of Students.

Finding Work — Applications for part-time employment during the college year may be made directly to the employing official, such as the Manager of the University Dining Hall, the Librarian, or the Superintendent of Properties. The office of the Associate Deans of Students will be glad to assist students in finding employment either on campus or in the homes and business establishments of

(Continued on Page 31)

Campus Map Legend

(The map will be found on the next two pages.)

UNIVERSITY BUILDINGS

1 Hetzel Hall, men's dormitory

2 Fairchild Hall, men's dormitory

3 Commons, dining hall and University Extension Service

4 Alexander Hall, men's dormitory

5 East and West Halls, men's dormitories

6 Engelhardt Hall, men's dormitory

7 Hunter Hall, men's dormitory

8 Gibbs Hall, men's dormitory

9 College Road Apartments, quarters for married students

10 Notch Hall, temporary student recreation center

11 Hood House, an out-patient clinic hospital for students

12 Hamilton Smith Library

13 Thompson Hall, administration, Bookstore, and Cooperative Extension Service

14 Murkland Hall, main building of the College of Liberal Arts; includes a 360-seat auditorium with an organ

15 Conant Hall, geology, geography, psychology, and hotel administration departments in Liberal Arts

16 DeMeritt Hall, history and sociology in Liberal Arts; mathematics and physics in Technology

17 Morrill Hall, headquarters of the College of Agriculture; government and economics in Liberal Arts

18 James Hall, chemistry in Technology; agricultural and biological chemistry in Agriculture

19 Hewitt Hall, art, photography, and occupational therapy in Liberal Arts; audio-visual center; printing department

20 Forestry Building, forestry in Agriculture

21 Kingsbury Hall, main building of the College of Technology; departments of chemical, civil, electrical, and mechanical engineering; Engineering Experiment Station

22 Poultry Plant, six buildings devoted to research and instruction

23 Service Buildings, maintenance shops and garages, storage rooms, and fire station

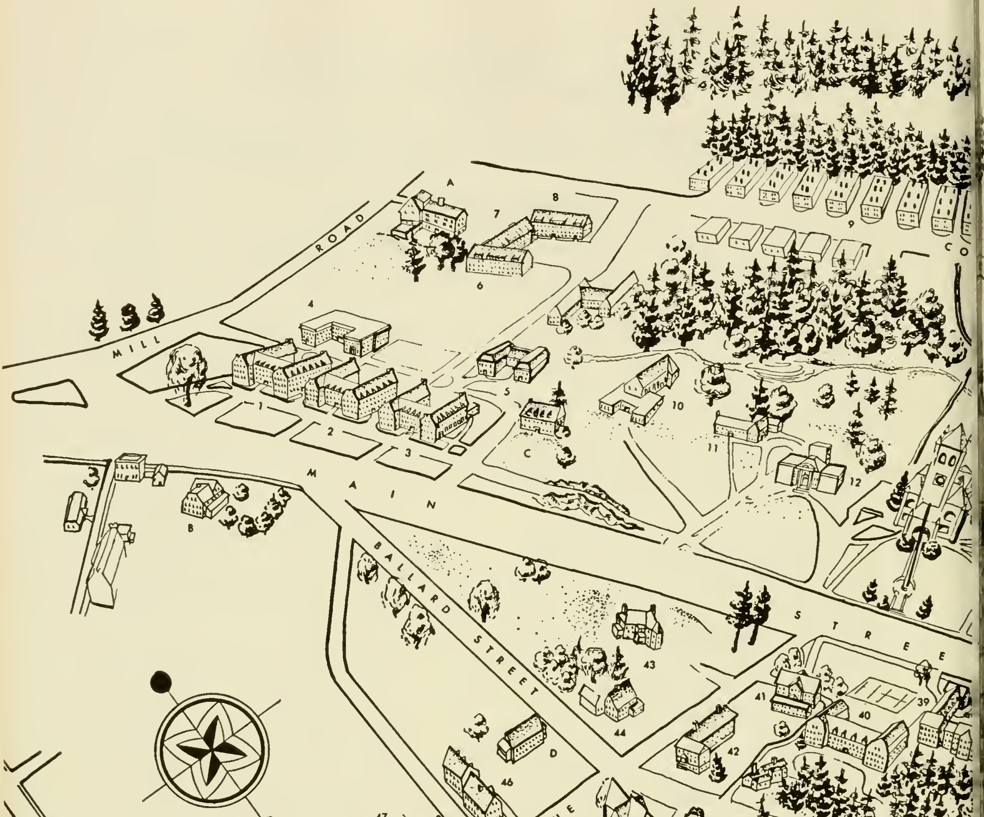
24 Power Plant, heating facilities for all University buildings

25 Pettee Hall, ROTC divisions; home economics and agricultural engineering in Agriculture

26 Dairy Building, dairy husbandry in Agriculture; manufacture and processing of ice cream and milk; animal metabolism laboratory

27 Nesmith Hall, agronomy, animal husbandry, botany, entomology, horticulture, and poultry husbandry in Agriculture; bacteriology and biology in Liberal Arts

(Continued on Page 30)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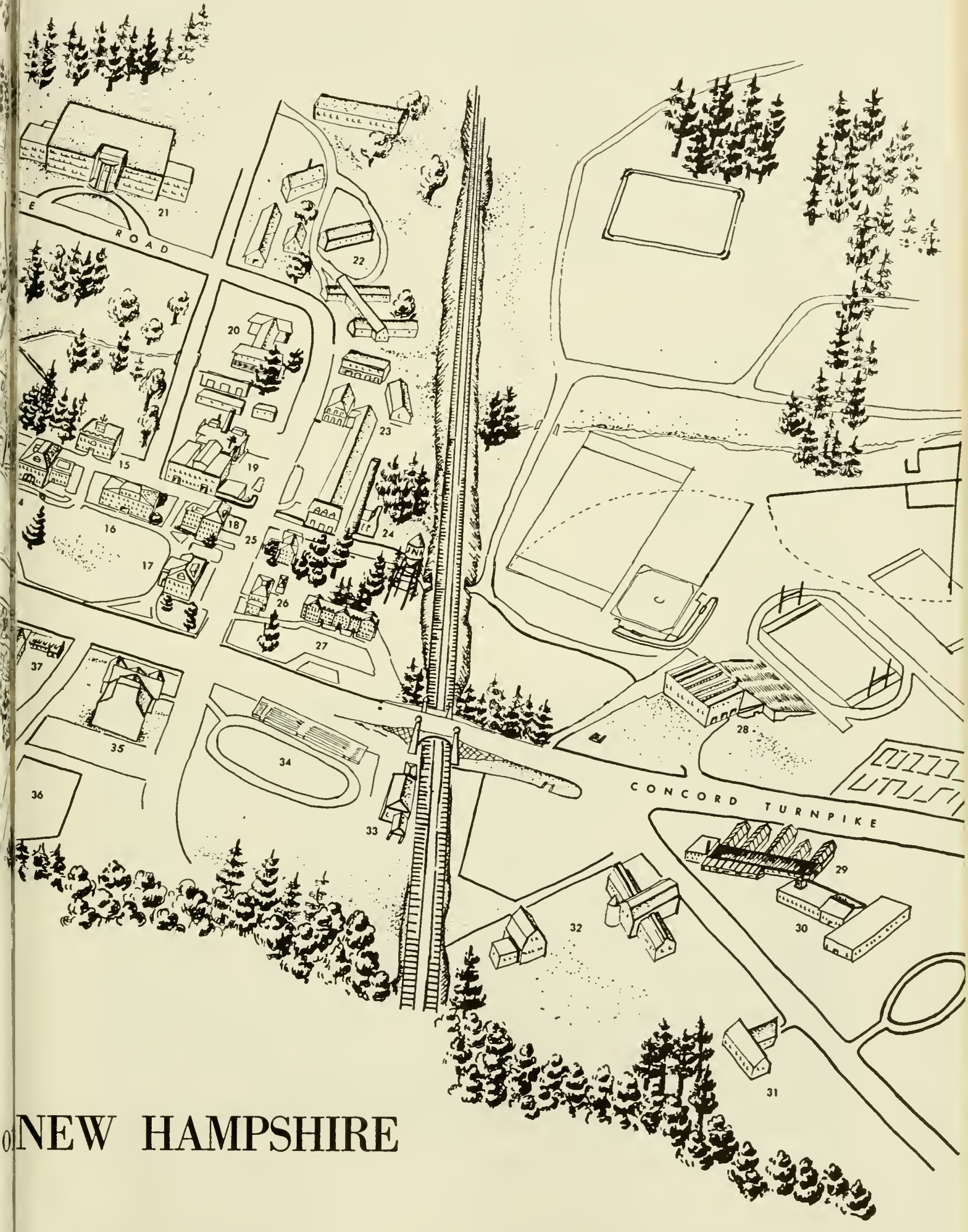
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NEW HAMPSHIRE

Campus Map Legend

(Continued from Page 27)

UNIVERSITY BUILDINGS

28 Lewis Fields, men's athletic plant, including field house, Cowell stadium, Brackett field (baseball), hockey rink, tennis courts, and other playing fields

29 Greenhouses

30 Putnam Hall, Thompson School; livestock and judging pavilion

31 Riding Stable

32 Livestock Barns, two of several used in Agriculture

33 Railroad Station. Boston and Maine Boston-Portland division

34 Memorial Field, women's athletics

35 New Hampshire Hall, women's athletics; 1,000-seat hall used for convocations, lectures, concerts, drama; United Protestant Association offices

36 Swimming Pool, an outdoor pool

37 Faculty Club

38 North Congreve Hall, women's dormitory

39 South Congreve Hall, women's dormitory

40 Scott Hall, women's dormitory

41 Smith Hall, women's dormitory

42 Sawyer Hall, women's dormitory

43 President's House

44 Alumni House, offices of Alumni Association; rooms for visiting alumni and guests

45 Ballard Hall, music in Liberal Arts; offices for student publications

46 Schofield Hall, women's dormitory

47 Pettee House, residence for employees

48 Practice House, home economics laboratory in Agriculture

FRATERNITIES AND SORORITIES

A. Acacia, men

B. Alpha Tau Omega, men

C. Kappa Sigma, men

D. Theta Kappa Phi, men

E. Lambda Chi Alpha, men

F. Chi Omega, women

G. Alpha Xi Delta, women

H. Alpha Gamma Rho, men

I. Tau Kappa Epsilon, men

J. Pi Kappa Alpha, men

K. Kappa Delta, women

L. Phi Delta Upsilon, men

M. Phi Mu, women

N. Phi Alpha, men

O. Alpha Chi Omega, women

P. Theta Upsilon, women

Q. Sigma Alpha Epsilon, men

R. Sigma Beta, men

S. Phi Mu Delta, men

T. Theta Chi, men

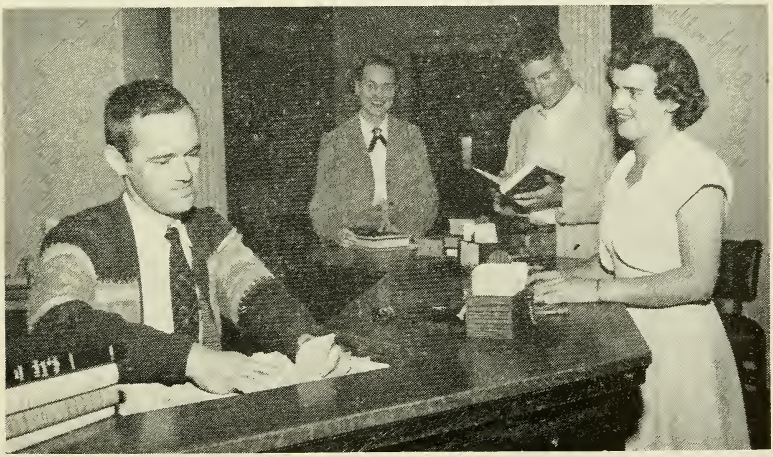
Durham. An ambitious, hardworking student usually will find steady part-time employment, either on or off campus. *It is seldom possible, however, for a Freshman to make complete arrangements before coming to Durham for Orientation Week. Usually the student's schedule of class hours must be arranged before a definite job is secured.*

Women students who wish to earn their room and board in private families must apply to an Associate Dean of Students, who will supervise the making of arrangements. Freshman women are advised against attempting to earn their room and board in this way unless they are in good physical condition and have had excellent preparation for their University work.

Scholarships

About 675 scholarships are awarded each year through the University Scholarship Committee. Of these 270 are reserved for Freshmen and a number of others are open for Freshman applications.

The total annual value of the scholarships is more than $82,000. Most of them pay $125 a year, though a few pay less and a few pay substantially more. Most of the scholarships are awarded to students with better than average scholastic records and a definite need for financial assistance. A few are awarded solely on the basis of outstanding accomplishment, while a number, the most important of which are the Tuition Grants, are awarded primarily on the basis



Many students finance part of their education by working on campus.

Two students discuss scholarship awards with the Dean of Students.

of financial need. In addition to the scholarships offered by the University, in many communities there are available scholarships for high-school graduates who are planning college study. These usually are awarded by a local service or women's club or by a trust fund. Local banks frequently have information about such trust funds. Freshmen who live in New Hampshire may obtain scholarship information and application blanks from their high-school principals or the University Director of Admissions. The financial advisers for students are the Associate Deans of Students. Students with special financial problems should contact one of them. Upperclass students should get their scholarship applications from the Associate Dean's office.

Applications by upperclassmen for scholarships should be filed by April 15 of the year preceding that for which the scholarship is sought. Applications by Freshmen should be made by July 15.

Holders of scholarships are expected to meet satisfactorily all college requirements. Due to fluctuations in the income of endowed scholarships and to other causes, the number and amount of scholarships may vary somewhat from year to year.

Scholarships and Grants Open to Freshmen Only

Tuition Grants — Two hundred and fifty paying $100-$125 each — three-quarters applying to tuition and one-quarter to fees. For Freshman residents of New Hampshire; based on financial need.

Ralph D. Hetzel Debating Scholarships — Three awarded each year, each paying $75 a year for three years. For winners of New Hampshire high-school debating competition.

Valentine Smith Scholarships — One awarded each year paying $100 a year for four years. The winner is determined by competitive examinations in English, American History, Algebra (through Quadratics), Plane Geometry, and either Physics or Chemistry; open to any Freshman. Examinations are given during Orientation Week. Notice of intent to take the examination should be given by September 1 to the Director of Counseling. (Gift of Hamilton Smith of Durham in 1898.)

Sears Roebuck Agricultural Foundation Scholarships — Twelve or more paying $100 to $150 each. For Freshmen in the College of Agriculture coming from farm homes; based on need, ability, and scholarship. Two of $100 each are reserved for women in Home Economics. (Given by the Sears Roebuck Agricultural Foundation.)

Concord Chapter, UNH Alumni Scholarships — Two paying $125. For a boy and a girl of Concord High School, St. John's High School, or Penacook High School who have graduated in the upper two fifths of the class. Based on financial need. (Gift of Concord Alumni Chapter.)

Sylvester M. Foster Scholarship — One paying $30. Based on need and ability. (Gift of Sylvester M. Foster, Class of 1884, in 1944.)

Roderick W. Smith Scholarship — One paying $30. For a Freshman from Cranford or some other New Jersey community. Based on need and ability. (Gift of Mr. and Mrs. Roderick W. Smith of Cranford, New Jersey, in memory of their son, Roderick Wheeler Smith, Jr., Class of 1945, who died in World War II.)

Scholarships Open to Freshmen and Upperclassmen

Frank S. Lord Scholarships — About 25 each paying $100 and up annually. Open only to residents of Carroll County selected on the basis of scholarship, belief in Christianity and the Protestant faith, character, leadership, and soundness of body. Applications must be filed by May 15. (Bequest in 1951 of Frank S. Lord of Ossipee.)

Conant Scholarships — Twenty paying $75 each ($100 to residents of Cheshire County). For men students resident in New Hampshire pursuing courses in agriculture. (Bequest of John Conant of Jaffrey.)

Isabel and Harriet Paul Scholarships. Ten of $150 each. Preference to outstanding New Hampshire residents. (Bequest of Isabel Paul in 1952.)

Non-Resident Scholarships — Fifty paying $100 each. For able students with financial need residing outside New Hampshire.

Class Memorial Scholarships — Seventeen paying $104 each. For students of good ability who participate in extra-curricular activities. The scholarships are named in honor of New Hampshire men who gave their lives in World War I. (Established by Classes of 1922 through 1930.)

100 Club Scholarships — Variable in number and amount. For good students who are outstanding in extra-curricular activities.

James A. Wellman Memorial Scholarship — One sufficient to cover the major part of a student's expenses each year. This scholarship usually is renewed each year for the holder and consequently is ordinarily open only once in four years. For a New Hampshire boy of promise from a small town or rural area who would otherwise be unable to afford college. (Gift of Mrs.

James A. Wellman, Mrs. Dorothy Wellman Burroughs, Helen Vincent Wellman, and Robert P. Burroughs, in memory of James A. Wellman.)

Corinne H. Coburn Scholarships — Three of $75 to $100. To able and needy students from Exeter. (Bequest of Corinne H. Coburn of Exeter in 1943.)

Alien Student Scholarships — Two paying tuition and one paying tuition, room, and board. For a foreign student who otherwise would be unable to study in the United States.

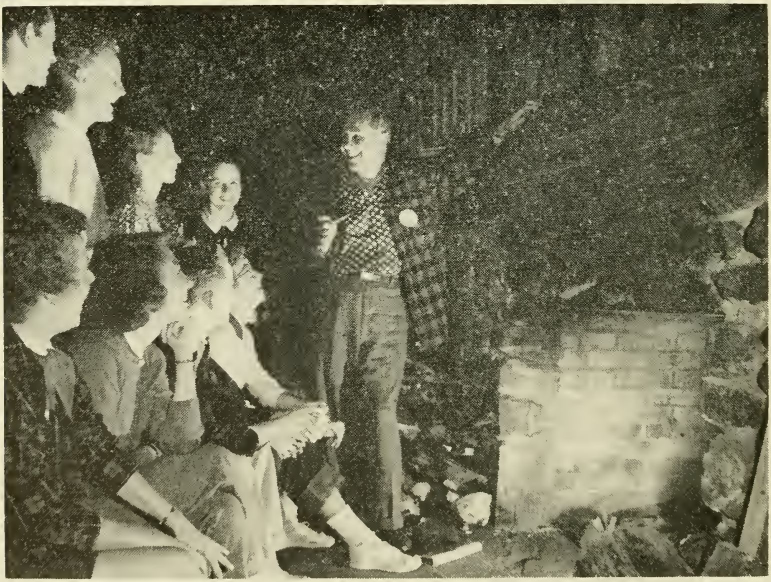
Frank B. Clark Scholarships — Two or more paying $100 to $200. For physically handicapped students from New Hampshire. (Gift of Frank B. Clark of Dover.)

World War Orphans Scholarships — Orphans of the World Wars may be eligible for scholarships provided by the State of New Hampshire, paying free tuition plus $250 additional toward college expenses. Application should be made to the Commissioner of Education, Concord, New Hampshire, who will notify the University if an award is made.

Winifred E. Chesley Scholarships — One or two paying $50 to $125. For students with financial need from Lee or Newmarket. (Bequest of Winifred E. Chesley of Lee in memory of her father and mother, Irving Glass and Carrie Wiggin Chesley, in 1943.)

Furio A. Abbiati Scholarship — One paying $100. Preference to a child of a member of the Class of 1927. (Gift of the Class of 1927 in memory of Furio A. Abbiati.)

Rockingham County Forest Fire Wardens Association Scholarship — One of $100 for a resident of Rockingham County enrolled in Forestry. on the



New students get acquainted and meet the faculty at Freshman Camp.

basis of character, leadership, scholarship, and need. (Gift of the Rockingham County Forest Fire Wardens Association.)

Class of 1931 Scholarship — One paying $75. Preference is given to a child of a member of the Class of 1931. (Gift of the Class of 1931.)

Oren V. "Dad" Henderson Memorial Scholarship — One of $150 for a male student with financial need who has shown qualities of leadership. (Gifts to the "Dad" Henderson Memorial Fund in 1951-52.)

Harry W. Evans Scholarship — One of $150 for an undergraduate or graduate student of high character and excellent scholarship. (Bequest in 1949 of Harry W. Evans, Class of 1901.)

Charles Stillings Scholarship — One of $150 for a male student of good scholastic ability, sound character, and unquestioned loyalty to the United States. (Gift of Charles E. Stillings, Class of 1900.)

Walter M. Wiggin Scholarship — One paying $150. For a student with financial need who has shown evidence of satisfactory scholarship and exceptional qualities of character and leadership. (Gift in 1952 of Mrs. Mary Eva Wiggin and her daughters, Mrs. Dora Steuber and Mrs. Elizabeth Crowell, in memory of Walter Millett Wiggin who lost his life in 1895 while a student.)

John N. Haines Scholarship — One paying $75. Preference is given to a student with financial need from Somersworth. (Bequest of John N. Haines of Somersworth.

Ordway Scholarship — One paying $60. Preference is given to a student with financial need from Hampstead or Sandown. (Bequest of Martha H. Ordway of Hampstead in 1934.)

Harvey L. Boutwell Scholarship — One paying $85. Preference is given to a student with financial need from Massachusetts. (Bequest of Harvey L. Boutwell of Malden, Mass., Class of 1882.)

Rosecrans W. Pillsbury Scholarship — One paying $20. Preference is given to a student with financial need from Londonderry. (Gift of R. W. Pillsbury of Londonderry in 1903.)

Scholarships Open Only to Those Above the Freshman Class

University Scholarships — One hundred and forty paying $100 to $125 For Sophomores and Juniors who are residents of New Hampshire and who have academic records above average combined with a definite financial need.

Hood Scholarships — Four of $250 each for upperclassmen in degree programs in the College of Agriculture and two of $100 each for students in the Thompson School of Agriculture. For students who have maintained high academic records; preference is given to majors in Dairy Husbandry. (Gift of Charles H. Hood Dairy Foundation.)

Westinghouse Achievement Scholarship — One paying $500 for a Senior in Electrical or Mechanical Engineering. For a student who excells scholastically and gives promise of unusual accomplishment in the field of engineering; selected by the Executive Committee of the College of Technology. (Gift of the Westinghouse Educational Foundation.)

George H. Williams Scholarships — Four paying $75 each. For deserving and meritorious students from Dover. Awarded for either the Sophomore or Junior year; not renewable. (Bequest of George H. Williams of Dover.)

New Hampshire Bankers Association Scholarship — One of $250. For a Senior, resident of New Hampshire, who is an Economics or Business major with special interest in the field of finance. Selected by Dean of Liberal Arts, chairman of department, and professor of finance. (Gift of the New Hampshire Bankers Association.)

Alfred Ernest Richards Memorial Scholarship — One paying $150. For a student majoring in English; selected by the faculty of the English Department. (Gift of Mrs. Alfred Ernest Richards in memory of her husband.)

Joseph L. Fearer Scholarships — Three paying $100 each. For students in the College of Technology. (Gift of Joseph L. Fearer, Class of 1931.)

Charles H. Wiggin Scholarship — Three paying $100 each. For needy and worthy students. (Bequest of Charles H. Wiggin of Malden, Mass., in 1943.)

Currier-Fisher Scholarship of New Hampshire's Daughters — Two of $100. For women students who are residents of New Hampshire. (Gift of New Hampshire's Daughters.)

Sears Roebuck Agricultural Foundation Scholarship — One of $250 for a Sophomore who as a Freshman held a Sears Roebuck Scholarship and made high grades. (Gift of Sears Roebuck Agricultural Foundation.)

Edmund L. Brigham Scholarship — Two of $75 each; for Sophomores. (Bequest of Edmund L. Brigham, Class of 1876.)

Varsity Club Scholarship — One of $125 for a Senior man outstanding in campus life. (Gift of the UNH Varsity Club.)

Granite State Hoo-Hoo Club Scholarship — One paying $100 for a Sophomore, Junior, or Senior in Forestry on the basis of character, scholarship, and interest in marketing wood products. (Annual gifts of Granite State Hoo-Hoo No. 107.)

Willis D. F. Hayden Scholarship — One of $125. For a needy and worthy student, preference to one from Hollis, N. H. (Bequest of Grace T. Hayden in 1952 in memory of her husband, Willis D. F. Hayden, Class of 1899.)

S. Morris Locke Memorial Scholarship — One paying $90; for a Senior who ranks highest in a field in which microscopic technique is emphasized. (Bequest of Mary D. Carbee of Haverhill, N. H., as a memorial to Mr. and Mrs. S. Morris Locke.)

Leon C. Calef Scholarship — One paying $100; for an upperclass student majoring in Poultry Husbandry. Awarded on the basis of need, character, leadership, and scholarship. (Gift of Leon C. Calef of Barrington, N. H.)

Georg Engelhardt Scholarships — Two paying $150 each; for Juniors who have been outstanding in scholarship and leadership. (Gift of former President Engelhardt.)

Charles H. Sanders Scholarship — One paying $85; for a Junior with financial need who has excelled in scholarship. (Bequest of Charles H. Sanders, Class of 1871.)

Blue Key Scholarship — One of $75 for a Junior man with satisfactory scholarship, extra-curricular participation, leadership, and high character. (Gift of Blue Key.)

Scabbard and Blade Scholarship — One of $50; for a Junior enrolled in advanced Military Science; selected by Scabbard and Blade and the Military Science Department. (Gift of Scabbard and Blade.)

New Hampshire Civic Federation Scholarship — One of $30; for a woman majoring in the Department of Economics and Business Administration; selected by the Dean of the College of Liberal Arts and two members of the department. (Gift of N. H. Branch of the National Civic Federation.)

Walter N. Shipley Scholarship — One of $50; for a student with financial need and good academic record; preference to be given to a student in Technology. (Bequest of Walter N. Shipley, Class of 1900.)

Student Loan Fund

In order to assist needy students to continue their education, the University has established a Student Loan Fund. After proper investigation and approval by parents, loans may be granted to responsible students for tuition or other college expenses, except that Freshmen holding Tuition Grants may borrow in addition not in excess of $25. These loans will bear interest at 2 per cent until graduation or withdrawal from the University, and 5 per cent after graduation or withdrawal and are payable as follows: $5 a month beginning one year after gradution or withdrawal; $10 a month beginning two years after graduation or withdrawal; $15 a month beginning three years after graduation or withdrawal; and a like sum each month thereafter until principal and interest are paid.

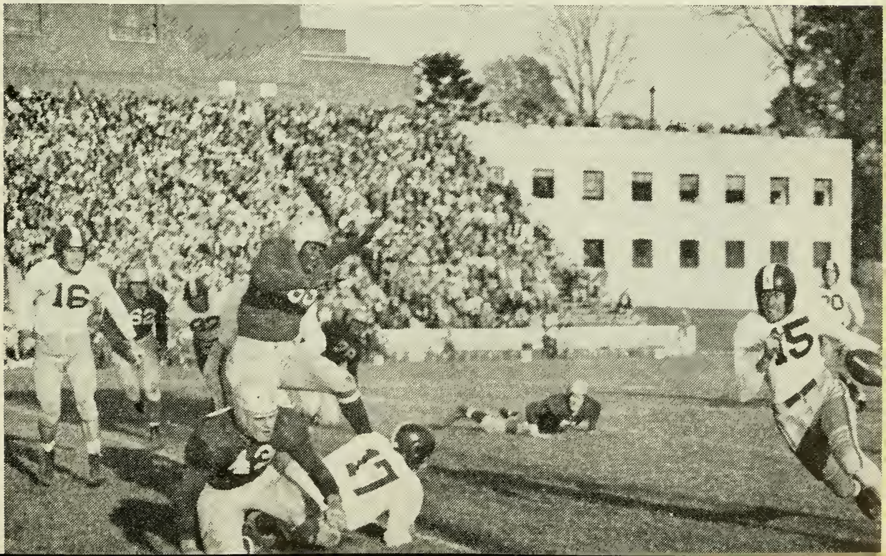
Gifts and bequests for student loan purposes have been received from the John H. Pearson Loan Fund, S. Morris Locke Loan Fund, Huntley N. Spaulding, Dr. James B. Erskine, R. C. Bradley Loan Fund of the New Hampshire Poultry Growers' Association, Agnes M. Lindsay, Charlotte A. Thompson, Dads-Hetzel Fund, Boston Chapter of the U.N.H. Alumni, Class of 1908 Fund, and the Coos County Teachers' Association.

Other Assistance

Luella Pettee Fund — During the year 1939-40, as a memorial to Mrs. Charles H. Pettee, her many friends subscribed to a fund, the income of which is to be used, upon approval of an Associate Dean of Students, to assist directly by small gifts worthy women undergraduates in need of financial assistance. The fund totals $1,883.

Frederick Smyth Book Fund — The income of a bequest of $2,000 in 1901 by Frederick Smyth of Manchester is applied to the purchase of books to be given annually to the most meritorious students.

A New Hampshire back gains around end during a fall football game.



The Programs of Study

The work of the University is divided so that when a student decides upon a general field of studies or a vocation, he is guided into a curriculum fitted to his purpose. The student who chooses the General Liberal Arts curriculum takes several courses in the subject he chooses as his *major*, but elects many other courses to broaden his education. The student who chooses certain of the Engineering curriculums, on the other hand, is confined principally to courses prescribed for him, all of which are technical or scientific, except for two or three courses in English and Economics. The other curriculums fall between these two extremes.

Except for the desirability of choosing among the three broad fields of Agriculture, Liberal Arts, and Technology, the Freshman entering the University may delay selection of a curriculum until he has been in attendance for a semester or more. Although there are some advantages in making an early decision, even when a student feels sure of his choice, he should bear in mind the possibility that he may change his mind and that it is well to avoid overspecialization in high school or in the first part of a college career.

Agricultural students measuring plant nutrients with Geiger counter.

No one can foresee the trend of the future. Therefore, the wise person is one who is prepared to make his way in more than one field.

The high-school senior should talk over his future plans with his teachers, guidance officer, and principal. *Officials of the University also will be glad to consult with him, preferably in an interview, but if that is not feasible, by mail.*

Each year, the University gives the entering Freshman a series of tests. The object of these tests is to furnish additional information to enable the faculty of the University to help the student choose the curriculum for which he is best fitted. The faculty advisers and the Counseling Service staff use these tests to help students solve their educational and personal problems.

Certain courses are pursued by all students in the University. English is required of all students in the Freshman year. During their first six semesters of attendance women students are required to take physical education. All men students, except those who have been in the military service, are required to take physical education for two semesters and military training during their first four semesters.

The University reserves the right to withdraw any course or curriculum announced in the catalogue or to substitute other courses or curriculums therefor.

Some of the words used to describe academic work will be unfamiliar to the person who has not been to college. For this reason the following terms used in this section are defined.

Semester. This is half of the college year. The fall semester starts in September and ends about the last of January. The spring semester starts about the first of February and ends in June.

Semester Hour. The semester hour represents one hour of class or about two hours of laboratory each week for a semester. Most college courses meet three days a week for an hour each day. They therefore are valued at three semester hours. A science course with three class meetings a week plus one laboratory period would have a value of four semester hours. In the College of Liberal Arts, 128 semester hours are required for graduation; 136 in Agriculture; and 144 in Technology.

Course. This term is used to describe the work of a semester in a specific subject such as Algebra, American History, or Organic Chemistry. Each course has assigned to it a value in semester hours credit.

Curriculum. This is a plan of study made up of courses arranged to satisfy the requirements for graduation in a particular field, for example, Civil Engineering, Poultry Husbandry, Business, or General Liberal Arts.

Major. A student in the General Liberal Arts curriculum chooses some subject such as English, Zoology, or History as his principal subject. This is said to be his major.

For convenience in administration the undergraduate work of the University is divided into three Colleges: Agriculture, Liberal Arts, and Technology.

The College of Agriculture

The College of Agriculture offers curriculums planned to give the student a broad general education as well as training in the basic sciences and specific instruction in technical phases of Agriuclture, Forestry, and Home Economics.

The following degrees are offered: Bachelor of Science in Agriculture, Bachelor of Science in Agricultural Engineering, Bachelor of Science in Forestry, and Bachelor of Science in Home Economics.

The student is given the opportunity to prepare for specific positions in the above areas or to obtain a general education in preparation for making a living in various farming enterprises. The student should determine the curriculum for which he possesses the greatest interest and aptitude and also consider the opportunities open to him in farming, extension, research, teaching, industries related to agriculture, and civil service work with both the state and national government. The curriculums in the college are:

Agriculture

Agricultural and Biological Chemistry
Agricultural Economics
Agronomy
Animal Husbandry
Botany
Dairy Husbandry
Entomology
General Agriculture
Horticulture
Mechanized Agriculture
Poultry Husbandry
Pre-Veterinary
Teacher Preparation in Agriculture

Agricultural Engineering

Agricultural Engineering

Forestry

Forest Recreation
General Forestry
Wildlife Management

Home Economics

General Home Economics
Food, Nutrition, and Institutional Management
Clothing and Textiles
Teacher Preparation in Home Economics

Courses taken during the Freshman year are: English, agricultural orientation, general chemistry, algebra, botany, physical education, zoology, and military or air science (for men). In addition an elective subject in the student's major field of interest is recommended.

During the following three years courses are taken in the biological sciences, agricultural chemistry, economics, English, physics (except in certain curriculums in Home Economics), social sciences, additional courses in the student's chosen curriculum, and elective courses.

For graduation 136 credit hours are required for all curriculums except for Agricultural Engineering where 144 hours are required.

Typical courses in the various fields of specialization include:

Agricultural and Biological Chemistry — biological chemistry, chemistry of plant growth, chemistry of human and animal nutrition, physiological chemistry, agricultural analysis.

Agricultural Economics — farm management, cooperative business, marketing, agricultural policy.

Agronomy — soils, fertilizers, cereal crops, potatoes, forage crops, seed testing, soil conservation, soil physics, soil chemistry.

Agricultural Engineering — agricultural power and machinery, agricultural shop, agricultural structures, calculus, surveying, soil and water engineering, machine drawing, kinematics, mechanics, thermodynamics, electrical machinery.

Learning to make all kinds of ceramics under a world-famous potter.

Animal Husbandry — types of livestock, livestock judging, feeds and feeding, anatomy, diseases, meat products, animal breeding.

Botany — general botany, plant anatomy and cytology, systematic botany, plant pathology, plant physiology, and plant ecology.

Dairy Husbandry — fundamentals of dairying, dairy cattle, market milk, ice cream, butter and cheese, dairy bacteriology, judging milk production.

Entomology — economic entomology, insects of orchard and garden, forest insects, medical entomology.

Forestry — tree and wood identification, silviculture, forest production, forest mensuration, use of air photos, forest utilization, forest recreation, forest management, wildlife management.

Mechanized Agriculture — farm shop, farm structures, farm wiring and electrical equipment, farm power and machinery.

Home Economics — clothing and textiles, food and nutrition, child development, home management, institutional management, hospital dietetics, home economics education, extension.

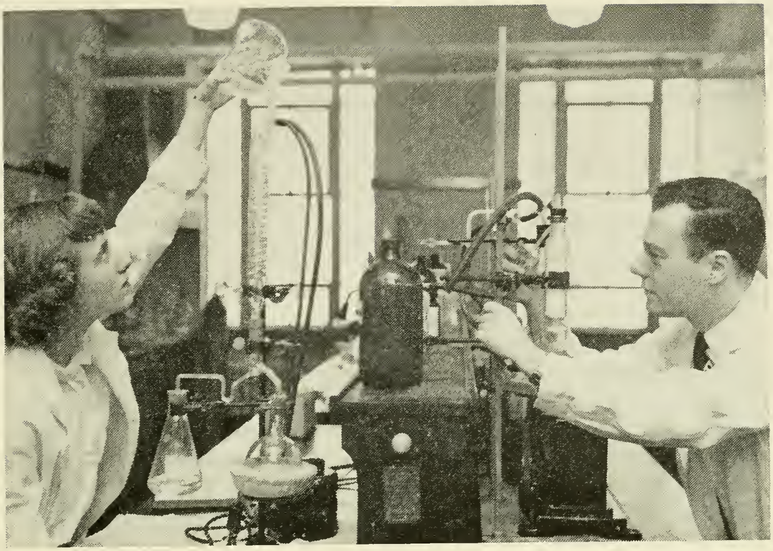
Horticulture — vegetable gardening, judging, ornamental woody plants, elementary landscape gardening, floral arrangement, greenhouse management, beekeeping, orchard fruits, small fruit culture, commercial vegetable production, plant breeding and propagation.

Poultry Husbandry — farm poultry, poultry breeding, judging, incubation and brooding, marketing, feeding, housing, poultry management, poultry diseases, turkey production.

Thompson School of Agriculture

The Thompson School of Agriculture is a part of the College of Agriculture. It offers training on a non-degree level. Any high-school graduate of good character or any student who has completed a minimum of two years of high school and is eighteen years of age or over may be admitted. Two years of class work and two years of summer placement for supervised farm experience are required for graduation.

The courses in the Thompson School are designed for young men and women who are interested in farming and its closely allied occupations. The program is vocational in nature. Because graduates of this school receive practical experience as well as an academic training, they are able to secure employment as trained workers. Opportunities for employment are numerous. The four majors offered are: Dairying, General Farming, Horticulture, and Poultry.



Students in Chemistry have many large laboratories in which to work.

The College of Liberal Arts

The offerings of the College of Liberal Arts fall into three groups: (1) General Liberal Arts; (2) Business and Professional Training (except teaching); and (3) Teacher Preparation.

General Liberal Arts

The student who elects the General Liberal Arts curriculum is given the opportunity to secure a broad general education in such divisions of learning as social science, the humanities, biological science, and physical science. Each student pursuing the General Liberal Arts curriculum must pass a reading test in a foreign language before graduation. A major may be taken in any of the following subjects: The Arts, Bacteriology, Biology, Botany, Chemistry, Economics, Education, English, Entomology, Geology, Government, History, History and Literature, Foreign Languages, Mathematics, Music, Physics, Psychology, Sociology, or Zoology.

In his first year, a student following the General Liberal Arts curriculum will take, in addition to physical education and (if a male) military training, an introduction to contemporary civilization, Freshman English, and a course in either biology or a physical science chosen from chemistry, geology, mathematics, or physics. His fourth course usually will be exploratory, an introductory course in the field in which he may decide to major.

In his Sophomore year, the General Liberal Arts student will continue a broadening education by fulfilling what are known as *Sophomore Group Requirements.* These require each student to take courses in each of the following groups:

Group I	*Group II*	*Group III*
Introduction to The Arts	Biology	Economics
English Literature	Chemistry	Government
American Literature	Geology	Psychology
Humanities	Mathematics	Sociology
Foreign Languages	Physics	
Appreciation of Music		
Philosophy		

A student may choose a major at the end of his Freshman year, or he may postpone his decision as late as the end of the Sophomore year. A minimum of 24 semester credits is required in the major though some majors may require one or more additional courses which do not count for major credit. The General Liberal Arts curriculum is intended to provide a concentration in a limited area but in no sense is it designed to prepare students completely for a specific vocation.

Business and Professional Training

The second group of offerings includes several prescribed curriculums giving preparation for certain vocations. These curriculums are: Business (with Accounting option), Hotel Administration, Medical Technology, Nursing, Occupational Therapy, Pre-Medical, Secretarial, and Social Service.

During the Freshman year, students following one of the prescribed curriculums take courses or have programs of courses very similar to those of students following the General Liberal Arts curriculum. The first year, those who are going into scientific fields usually take two sciences instead of one. In general, however, *the work of the first year is broadening, rather than specialized.* Students following a prescribed curriculum are not held for the language reading requirement, but an attempt is made to broaden the curriculums by including one year's work in both the Humanities and the Social Sciences. Required courses in the various prescribed curriculums in the Sophomore, Junior, and Senior years include the courses listed. The balance of a student's program is made up of electives.

Business — accounting, U. S. economic history, business communications, corporation finance, economic and business statistics, principles of economics, commercial law, marketing, public speaking, money and banking, business management, labor economics, plus four courses which must be elected from other offerings in the Department of Economics and Business Administration.

Students choosing the *Accounting Option* in the Business curriculum take all the foregoing courses except business management, labor economics, and the four elective courses, but in addition must take introduction to business, intermediate accounting, cost accounting, advanced accounting, federal tax accounting, auditing, accounting systems, and personnel administration.

Hotel Administration — chemistry for freshman science, hotel orientation, elementary drafting, elementary accounting, hotel accounting, hotel engineering, hotel management lectures, hotel operation, principles of economics, commercial law, foods, quantity cookery, psychology, textiles and furniture, circuits and appliances, heating and ventilating, and introductory physics.

Medical Technology — chemistry and biology for freshman science, mathematics, quantitative analysis, organic chemistry, physiological chemistry, human anatomy-physiology, general bacteriology, pathogenic bacteriology, immunology and serology, and introductory physics.

Students in this curriculum usually spend seven semesters on campus, then register for Biology 62 and complete one year in an approved hospital laboratory under supervision. When all the re-

This class in Government is typical of student-teacher relationship.

Students learn to work with a microscope in this Botany laboratory.

quirements for the B.S. degree have been completed, the student will normally also be prepared for the "Medical Technologist" examination for certification.

Nursing — chemistry and biology for freshman science, human anatomy-physiology, histology and microtechnique, and organic chemistry.

Three years on campus are followed by a three-year training period in an approved hospital.

Occupational Therapy — biology for freshman science, sociology, drawing and design, crafts, ceramics-modeling and puppetry, general psychology, mental hygiene, psychopathology, human anatomy-physiology, lettering and printing, theory of occupational therapy, elementary processes in wood and plastics, library methods, psychology of childhood, clinical subjects, neurology, and kinesiology.

Students planning on this curriculum must take a series of examinations preceding the Sophomore year. The results of these will be used in advising the student whether or not he or she may continue in the curriculum.

Pre-Medical — chemistry and biology for freshman science, mathematics, general zoology and comparative anatomy, qualitative analysis, physics, organic chemistry, and language.

Secretarial — introduction to business, shorthand, typing, filing, office machines, office procedure and practice, business writing, U. S. economic development, accounting, and commercial law.

Social Service — biology for freshman science, general psychology, mental hygiene, public health and sanitation, social psychology, community organization, crime and its treatment, the family, methods of social research, introduction to social work, social research seminar, social service field work, methods of social progress, and genetics.

Teacher Preparation

Students may prepare for teaching in the secondary schools of New Hampshire and neighboring states either in a General Liberal Arts major or in one of the specialized teacher preparation curriculums.

Usually only those who have objectives which can be met in no other way will be majors in the Department of Education. Most of those planning to teach in the secondary schools will major in a particular subject-matter area such as Biology, English, Government, History, Languages, Mathematics. Professional courses in Education required for state certification are taken as electives while completing the requirements for the Bachelor of Arts Degree.

Those students who are interested in the specialized areas of Art, Music, or Physical Education may complete the requirements for the Bachelor of Science degree in one of the following prescribed curriculums.

These curriculums all include educational psychology, principles of secondary education, supervised teaching, social science, humanities,* and principles of teaching†. Other courses are included as shown.

Art Education — drawing and design, ceramics, introduction to the arts, painting—water color and oil, stagecraft, historic costume, home decoration, crafts, and problems of teaching art.

Music Education — sight singing, ear training and dictation, harmony, music history and literature, applied music, music organizations, principles of conducting, problems of teaching elementary school music, French, German, or Italian, teaching of brass, percussion, strings, and woodwinds, orchestration and chorestration, and problems of teaching secondary school music.

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* Humanities is not specified in Music-Education.

† Principles of teaching is not included in Women's Physical Education.

Physical Education Teacher Preparation for Men — major teaching subject, minor teaching subject, principles of physical education, human anatomy-physiology, directed teaching in physical education, problems of teaching in physical education, problems of coaching, and administration of physical education.

Physical Education Teacher Preparation for Women — principles of physical education, human anatomy-physiology, recreation leadership, survey of dance, health education, theory of team sports, kinesiology, remedial gymnastics, administration of physical education for women, theory of individual sports, problems of teaching physical education for women, and directed teaching of physical education for women.

Students who desire to prepare themselves as playground directors, etc., may elect to follow the *Recreation Option.* In the Junior and Senior years this option substitutes for certain courses in the Physical Education Teacher Preparation program the following: stagecraft, crafts, dramatics workshop, organized camping, field biology and nature study, music appreciation, community organization, plus an additional elective in the humanities.

Musical activities provide cultural opportunities for the whole campus.

Other Opportunities

Interested students may pursue courses which give training in the areas of Applied Biology, Biological Laboratory Technique, and Pre-Dentistry. For a number of professions such as law, teaching, library work, and so on, the student who can afford it will be better prepared if he takes a four-year Liberal Arts course and then obtains his professional training on the graduate level. *A student who is interested in a combination of courses not listed in a regular curriculum will find it easier to arrange what he wants in the College of Liberal Arts than in either of the other Colleges.*

The College of Technology

The College of Technology offers curriculums in Chemistry, Mathematics, Physics, and the following branches of Engineering: Chemical, Civil, Electrical, and Mechanical. Mathematics and the physical sciences are basic for all Engineering curriculums. Students who have done well in these subjects in high school will not find it difficult to carry the work in this field.

The Freshman year for all curriculums in the College of Technology includes algebra, trigonometry, analytic geometry, introduction to calculus, general chemistry, engineering drawing, and English. The Civil Engineering major includes surveying in the second semester.

In the Sophomore year all Technology students take calculus, general physics, and economics. Other courses of the different curriculums in the Sophomore, Junior, and Senior years include:

Chemical Engineering — semi-micro qualitative analysis, quantitative analysis, organic chemistry, stoichiometry, technical quantitative analysis, unit processes, physical chemistry, unit operations, fundamentals of electricity, chemical engineering economics, unit operations laboratory, chemical engineering thermodynamics, chemical engineering project, chemical literature and seminar, chemical plant design, and mechanics or elective.

Chemistry — semi-micro qualitative analysis, quantitative analysis, German, organic chemistry, stoichiometry, technical quantitative analysis, instrumental analysis, physical chemistry, government, physical chemistry, chemical literature and seminar, and thesis.

Civil Engineering — route surveying, engineering materials, fluid mechanics, theory of structures, general geology, mechanics, heat power engineering, fundamentals of electricity, highway engineering and transportation, soil mechanics and foundations, hydraulic and sanitary engineering, structural design, reinforced concrete structures, and writing of technical reports.

Electrical Engineering — electrical engineering theory, kinematics, electrical laboratory, electrical machinery, electrical circuits, electronic tubes, mechanics, heat power engineering, mechanical laboratory, differential equations, electronics and communications, illumination, electrical transmission, advanced circuit theory, advanced electronics, electrical measurements, fluid mechanics, writing of technical reports, industrial management, and engineering economy.

Mathematics — French, German, differential equations, applied mathematics, introduction to analysis, higher algebra, mathematical statistics, differential geometry, astronomy, advanced calculus, theory of functions, physical mechanics.

Mechanical Engineering — machine drawing, kinematics, manufacturing processes, electrical machinery, mechanics, thermodynamics, mechanical laboratory, engineering materials, fluid mechanics, machine design, power plants, internal combustion engines, industrial management, engineering economics, and writing of technical reports.

Physics — German, general physics, applied mathematics, differential equations, optics, heat, theory of electricity and magnetism, physical mechanics, modern physical theories, theoretical physics, advanced laboratory, electronics, electrical discharge through gases, and advanced calculus.

Other Programs of Study

The Graduate School

The Graduate School, which has offered instruction since 1903, has for its objective the bringing together of faculty and qualified students in a spirit of scholarship and research. The graduate student is given opportunity to specialize in some field of knowledge, and to develop a maturity of thought and attitude toward his professional field, so that both his professional and his cultural life are enhanced. Graduate work is offered by members of the University departments of instruction and research. The work of the Graduate School is under the general direction of the Graduate Faculty, composed of certain administrative officers, all department chairmen whose departments are offering graduate work, and all instructors who are offering courses numbered from 101 through 199 in any given year, inclusive of the Summer Session, or who are supervising graduate theses. The Dean of the Graduate School is responsible for the administration of the regulations and requirements pertaining to admission, conduct of work, the granting of advanced degrees, and other pertinent matters.

Graduate programs are offered by the following departments: Agricultural and Biological Chemistry, Agricultural Economics, Agricultural Education, Agronomy, Animal Husbandry, Bacteriology, Biology, Botany, Chemical Engineering, Chemistry, Civil Engineering, Dairy Husbandry, Electrical Engineering, Entomology, Home Economics, Horticulture, Mathematics, Mechanical Engineering, Physics, Poultry Husbandry, and Zoology leading to the Master of Science degree; Economics, English, Government, History, Languages, Mathematics, Psychology, and Sociology leading to the Master of Arts degree; and Education leading to the Master of Education degree.

Graduate assistantships are available in a number of departments. The work required may be in the nature of research, teaching, or general service. For information regarding assistantships, one should direct inquiries to the chairman of the department concerned.

A limited number of graduate scholarships are available each year. The recipient of such a scholarship is exempted from the payment of tuition. Requirements for the awards are: (1) A superior undergraduate record, and (2) the taking of the Graduate Record Examination. For information concerning graduate scholarships, one should direct inquiries to the Dean of the Graduate School.

For detailed information concerning admission, requirements for degrees, description of courses open to graduate students, and other matters not covered above, write to the Dean of the Graduate School. The Graduate School issues its own catalogue which may be obtained upon request to the Office of the Graduate School.

Round-table discussion is the teaching method used in some courses.

The Summer Session

The Summer Session is an integral part of the University program. Courses are offered by the three Colleges and the Graduate School to meet the needs of teachers, administrators, and supervisors of elementary and secondary schools; students who seek special professional preparation or are working for undergraduate or graduate degrees; students who anticipate courses or are supplying deficiencies; qualified and mature persons who wish to take courses for general cultural purposes. Qualified instructors are drawn from the University faculty and are supplemented by specialists selected for their attainments in particular fields at other institutions. The catalogue of the Summer Session gives specific information as to courses.

In addition to the offerings available at the University in Durham, summer instruction is given in Forestry and Fish and Game Management at the Forestry Summer Camp.

Reserve Officers Training Corps

In cooperation with the Federal Government, the University maintains a Reserve Officer Training Corps as a part of the federal system to provide trained reserve officers for the military services. There are Army and Air Force units.

While the Federal Government supervises the training, details officers and non-commissioned officers as instructors, and provides the necessary equipment, students who are members of the ROTC are in no way members of the military forces. Under the present provisions of the National Selective Service Act, certain qualified students may, upon signing a deferment agreement, be deferred from induction into the armed forces during the period of enrollment in the ROTC. Students signing a deferment agreement agree to enroll in the advanced course (Junior and Senior years), if offered the opportunity. Those enrolling in the advanced course agree to attend ROTC summer camp and to complete the course of instruction as a prerequisite to graduation. Those in the advanced course receive a monetary subsistence allowance of about $275 per academic year.

Students enrolled in the ROTC will be furnished uniforms which are worn during military instruction, when prescribed. A deposit of $15 is required of each student having military clothing or equipment in his possession. This deposit is returned when the student completes his ROTC instruction, except that a reasonable deduction will be made to cover loss or any unusual wear. Those completing the advanced course are allowed to keep their uniforms.

After once being enrolled in either the Army or the Air Force, the student may not transfer to the other service. Transfer students

Military drill is performed by the more than 1,200 ROTC students.

(at the Junior and Senior Class level) and Freshmen entering with previous military training should consult the ROTC officers regarding the possibility of qualifying for enrollment.

Students satisfactorily completing the advanced course are, upon graduation, ordinarilly commissioned as reserve second lieutenants. Students designated as Distinguished Military Students during the second year of the Army advanced course are eligible to apply for direct appointments as commissioned officers in the Regular Army. Air Force officers may apply for regular Air Force commissions upon completion of 18 months active duty.

For Reference

Board of Trustees

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*Anna L. Philbrook, m.d. July 1, 1949 to June 30, 1955	Dunbarton, N. H.
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George L. Frazer July 1, 1950 to June 30, 1954	Monroe, N. H.
*George E. Coleman, Jr., b.s. July 1, 1952 to June 30, 1956	Exeter, N. H.
Walter L. Barker September 16, 1952 to June 30, 1955	Nashua, N. H.

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*Elected by Alumni.

Officers of Administration

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Doris Beane, University Recorder

Laurence A. Bevan, Director of Cooperative Extension Service

Edward Y. Blewett, Dean of the College of Liberal Arts

Thelma Brackett, Librarian

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Harold C. Grinnell, Dean of the College of Agriculture and Director of the Agricultural Experiment Station

Harold I. Leavitt, Superintendent of Properties

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Paul E. Schaefer, Associate Dean of the College of Liberal Arts

Lauren E. Seeley, Dean of the College of Technology and Director of the Engineering Experiment Station

Dorothy F. Snyder, Associate Dean of Students

Henry B. Stevens, Director of the University Extension Service

Further Information

Correspondence in regard to the University of New Hampshire and its program of instruction should be addressed to the following:

General Information

Secretary of the University
Thompson Hall, Durham, N. H.

Admission to the Undergraduate Colleges

Director of Admissions
Thompson Hall, Durham, N. H.

Graduate School

Dean of the Graduate School
Thompson Hall, Durham, N. H.

Summer Session

Director of Summer Session
Thompson Hall, Durham, N. H.

Thompson School of Agriculture

Head, Thompson School of Agriculture
Putnam Hall, Durham, N. H.

Agricultural and Home Economics Extension

Director of Cooperative Extension Service
Thompson Hall, Durham, N. H.

University Extension

Director of University Extension Service
Commons, Durham, N. H.

Alumni Activities

Alumni Secretary
Alumni House, Durham, N. H.

Catalogue Issue

Bulletin
# of the
University of New Hampshire

VOL. XLV APRIL 1954 NO. 7

Foreword

This issue of the Bulletin of the University of New Hampshire provides a detailed description of curriculums, courses, and requirements for study at the University.

Other information about the University — its history, its general philosophy and objectives, its buildings and equipment, its student personnel services, student organizations, methods of admission, student fees and expenses, and financial aid including scholarships — will be found in the *General Information 1954-55* issue of the Bulletin.

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CALENDAR

1954

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AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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1956

JANUARY

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FEBRUARY

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MARCH

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APRIL

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MAY

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JUNE

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University Calendar

Summer Session

1954

July	6	Tuesday	Summer Session registration
July	7	Wednesday	Classes begin at 7:30 a.m.
Aug.	13	Friday	Summer Session closes

First Semester

Sept.	13	Monday	First general Faculty meeting
Sept.	13	Monday	Orientation Week begins
Sept.	20	Monday	Classes begin at 8:00 a.m.
Nov.	15	Monday	Mid-Semester reports to be filed, 9:00 a.m.
Nov.	24	Wednesday	Thanksgiving recess begins at 12:00 noon
Nov.	29	Monday	Thanksgiving recess ends at 8:00 a.m.
Dec.	18	Saturday	Christmas recess begins at 12:00 noon

1955

Jan.	3	Monday	Christmas recess ends at 8:00 a.m.
Jan.	17	Monday	Examination Period
Jan.	28	Friday	

Second Semester

Jan.	31	Monday	Classes begin at 8:00 a.m.
Feb.	18	Friday	Winter Carnival — no classes Friday, 1:00 p.m., to Monday, 8:00 a.m.
Feb.	19	Saturday	
Mar.	8	Tuesday	Town Meeting, classes excused 10:00 a.m. to 2:00 p.m.
Mar.	28	Monday	Mid-Semester reports to be filed, 9:00 a.m.
Apr.	2	Saturday	Spring recess begins at 12:00 noon
Apr.	12	Tuesday	Spring recess ends at 8:00 a.m.
May	7	Saturday	Mothers' Day
May	23	Monday	Examination Period
June	3	Friday	
June	3	Friday	Alumni Weekend starts
June	5	Sunday	Commencement

Board of Trustees

HIS EXCELLENCY, GOVERNOR HUGH GREGG, A.B., LL.B., LL.D., *ex officio*	
PERLEY I. FITTS, B.S., COMMISSIONER OF AGRICULTURE, *ex officio*	
PRESIDENT ROBERT F. CHANDLER, JR., PH.D., LL.D., *ex officio*	
FRANK W. RANDALL, B.S., LL.D., President July 1, 1936 to June 30, 1956	Portsmouth, N. H.
LAURENCE F. WHITTEMORE, M.A., LL.D., Vice-President September 14, 1944 to June 30, 1956	Pembroke, N. H.
MARY S. BROWN December 20, 1944 to June 30, 1955	Center Sandwich, N. H.
AUSTIN I. HUBBARD, B.S., Secretary December 20, 1944 to June 30, 1957	Walpole, N. H.
*ANNA L. PHILBROOK, M.D. July 1, 1949 to June 30, 1955	Dunbarton, N. H.
ERNEST W. CHRISTENSEN, B.S. July 1, 1949 to June 30, 1957	Dover, N. H.
MAURICE F. DEVINE, LL.B., LL.D. July 1, 1950 to June 30, 1954	Manchester, N. H.
GEORGE L. FRAZER July 1, 1950 to June 30, 1954	Monroe, N. H.
*GEORGE E. COLEMAN, JR., B.S. July 1, 1952 to June 30, 1956	Exeter, N. H.
WALTER L. BARKER September 16, 1952 to June 30, 1955	Nashua, N. H.

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*Elected by Alumni.

Officers of Administration

Robert F. Chandler, Jr., President of the University

Doris Beane, University Recorder

Laurence A. Bevan, Director of the Cooperative Extension Service

Edward Y. Blewett, Dean of the College of Liberal Arts

Thelma Brackett, Librarian

Edward D. Eddy, Jr., Assistant to the President and Director of University Development

Harold C. Grinnell, Dean of the College of Agriculture and Director of the Agricultural Experiment Station

Harold I. Leavitt, Superintendent of Properties

John A. MacDonald, University Physician and Director of the Student Health Service

Raymond C. Magrath, Treasurer

Paul H. McIntire, Director of Counseling

William A. Medesy, Associate Dean of Students

Herbert J. Moss, Dean of the Graduate School, Coordinator of Research, and Director of the Summer Session

William L. Prince, University Alumni Secretary

Donald H. Richards, Director of Admissions and Director of Placement

Mathias C. Richards, Associate Dean of the College of Agriculture

Everett B. Sackett, Dean of Students

Paul E. Schaefer, Associate Dean of the College of Liberal Arts

Lauren E. Seeley, Dean of the College of Technology and Director of the Engineering Experiment Station

Dorothy F. Snyder, Associate Dean of Students

Henry B. Stevens, Director of the University Extension Service

The University Faculty and Staff**

ROBERT F. CHANDLER, JR., *President of the University*
B.S., University of Maine, 1929; Ph.D., University of Maryland, 1931; LL.D. (Hon.), University of Maine, 1951. (1947-)

BATCHELDER, LYMAN J., *Instructor Emeritus in Mechanical Engineering, Woodshop.* (1915-)

BISBEE, HARLAN M., *Associate Professor Emeritus of Education*
A.B., Bowdoin College, 1898; A.M., Harvard University, 1905. (1928-)

BOWLES, ELLA S., *Publications Editor Emeritus*
Plymouth Normal School, 1905. (1943-)

COULTER, CHARLES W., *Professor Emeritus of Sociology*
B.A., University of Toronto, 1908; B.D., Victoria College, 1909; M.A., Yale University, 1910; Ph.D., *ibid.*, 1914. (1934-)

GETCHELL, EDWARD L., *Professor Emeritus of Mechanical Engineering*
B.S., University of Maine, 1914; E.E., *ibid.*, 1920. (1917-)

HOWES, HORACE L., *Professor Emeritus of Physics*
B.S., Syracuse University, 1905; Ph.D., Cornell University, 1915. (1918-)

JACKSON, C. FLOYD, *Professor Emeritus of Zoology*
B.A., De Pauw University, 1905; M.S., Ohio State University, 1907. (1908-)

McLAUGHLIN, HELEN F., *Professor Emeritus of Home Economics*
B.A., University of Wisconsin, 1909; B.S., Simmons College, 1915; M.A., Teachers College, Columbia University, 1925. (1917-)

O'BRIEN, DANIEL A., *County Agent Leader Emeritus*
Cornell University, 1913. (1920-)

†O'KANE, WALTER C., *Professor Emeritus of Economic Entomology*
B.A., Ohio State University, 1897; M.A., *ibid.*, 1909; D.Sc. (Hon.), *ibid.*, 1932. (1909-)

RITZMAN, ERNEST G., *Research Professor Emeritus of Animal Husbandry*
B.S.A., Iowa State College, 1903; M.S. (Hon.), University of New Hampshire, 1928. (1915-)

SANBORN, MARY L., *Assistant State Club Leader Emeritus*
Oread Institute, 1904. (1915-)

SMITH, LUCINDA P., *Associate Professor Emeritus of English*
A.B., Colby College, 1901; M.A., Boston University, 1934. (1919-)

SMITH, MELVIN M., *Associate Professor Emeritus of Chemistry*
A.B., Colby College, 1890; A.M., *ibid.*, 1893. (1917-)

SMITH, TODD O., *Research Assistant Professor Emeritus of Agricultural and Biological Chemistry*
A.B., Indiana University, 1910; M.S., New Hampshire College, 1917. (1910-)

TAYLOR, FREDERICK W., *Director Emeritus of Agricultural Service Departments of the College of Agriculture*
B.S., Ohio State University, 1900. (1903-)

TONKIN, JOHN C., *Instructor Emeritus in Mechanical Engineering, Machine Shop* (1910-12, 1924-)

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†Indicates part time devoted to Agricultural Experiment Station.

*Indicates part time devoted to Cooperative Extension Service.

**As of January 1, 1954.

Abbott, Helen D., *Head Cataloguer*
A.B., Wheaton College. 1929; S.B. in L.S., Simmons College, 1930; A.M., Middlebury College, 1939. (1943-)

Abell, Max F., *Extension Associate Professor of Agricultural Economics*
B.S., Cornell University, 1914; Ph.D., *ibid.*, 1924. (1926-)

Adams, Eloi A., *Agricultural Agent in Strafford County*
B.S., New Hampshire College, 1918. (1919-)

Adkins, Mildred, *Lecturer in Zoology*
B.A., Teachers College, Columbia University, 1926; M.A., *ibid.*, 1929. (1947-)

†Allen, Fred E., *Professor of Poultry Husbandry, and Veterinarian, Agricultural Experiment Station*
B.S., University of New Hampshire, 1932; D.V.M., Ohio State University, 1936. (1940-)

Allen, M. Jean, *Assistant Professor of Zoology*
A.B. Miami University, 1941; M.Sc., Ohio State University, 1942; A.M., Radcliffe College, 1943; Ph.D., *ibid.*, 1946. (1948-)

Alling, Edwin S., *Assistant Professor of Civil Engineering*
B.S.E., University of Connecticut, 1950; M.Engr., Yale University, 1951. (1952-)

Ames, Dennis B., *Professor of Mathematics*
B.A., Bishop's University, 1927; M.A., *ibid.*, 1928; Ph.D., Yale University, 1931. (1949-)

Anderson, Charlotte K., *Assistant Librarian and Documents Librarian*
B.A., University of Michigan, 1935; A.B.L.S., *ibid.*, 1936; A.M.L.S., *ibid.*, 1951. (1943-)

†Averill, Warren, *Assistant Professor of Agricultural and Biological Chemistry*
Sc.B., Brown University, 1948; M.S., University of Massachusetts, 1950; Ph.D., *ibid.*, 1951. (1951-)

Babcock, Donald C., *Professor of Philosophy*
B.A., University of Minnesota, 1907; M.A., *ibid.*, 1908; S.T.B., Boston University, 1912. (1918-)

Baler, Lenin A., *Assistant Professor of Psychology*
A.B., Harvard College, 1947; A.M., Boston University, 1948; Ph.D., *ibid.*, 1950. (1951-)

Ballard, Horace C., *Agricultural Agent in Belknap County*
B.S., Cornell University, 1936. (1949-)

Barker, Troy A., *Lieutenant Colonel, Artillery, Professor of Military Science and Tactics*
B.S., University of Alabama, 1933. (1952-)

Barraclough, Kenneth E., *Extension Associate Professor of Forestry*
B.S., New York State College of Forestry, Syracuse University, 1921; M.F., Harvard University, 1940. (1926-)

Barrett, Harry L., Jr., *Assistant Professor of Economics*
A.B., University of Rochester, 1943; A.M. Harvard University, 1950. (1951-)

Bartley, Clara H., *Assistant Professor of Bacteriology*
B.S., Miami University, 1923; M.A., University of Michigan, 1926; Ph.D., University of Kansas, 1935. (1945-)

Bartley, Irving D., *Assistant Professor of Music and University Carilloneur*
B.M., Syracuse University, 1933; M.M., *ibid.*, 1938. (1945-)

THE UNIVERSITY FACULTY

BARTON, PHILIP S., *Professor of Agricultural Education and Head, Thompson School of Agriculture*
B.S., University of New Hampshire, 1928; M.Ed., *ibid.*, 1938. (1939-)

BASSETT, RAYMOND E., *Professor of Sociology*
A.B., Yale University, 1928; M.A., University of Vermont, 1934; Ph.D., University of Washington. 1948. (1948-)

BATCHELDER, GERALD M., *Research Associate, Engineering Experiment Station*
B.S.C.E., University of New Hampshire, 1950; M.S.C.E., Purdue University, 1952. (1953-)

BATCHELLER, JOSEPH D., *Associate Professor of Speech*
A.B., Carnegie Institute of Technology, 1936; A.M., University of Minnesota, 1938; Ph.D., *ibid.*, 1942. (1944-)

BEAL, MURIEL E., *Home Demonstration Agent in Grafton County*
B.S. in Home Economics, Farmington State Teachers College, 1939. (1951-52, 1953-)

BEANE, DORIS, *University Recorder*
A.B., Smith College, 1919; M.A., Teachers College, Columbia University, 1942. (1923-)

BECKINGHAM, KATHLEEN R., *Counselor, Counseling Service*
B.A., University of New Hampshire, 1940; M.Ed., *ibid.*, 1941. (1951-)

BECKWITH, MARION C., *Director and Professor of Physical Education for Women*
A.B., Oberlin College, 1935; M.Ed., University of New Hampshire, 1937. (1935-)

BEGGS, ANN F., *Extension Associate Professor of Home Economics*
B.S., Nasson College, 1947 (1917-)

BENEDICT, RICHARD F., *Cataloguer*
B. Music Ed., Catholic University of America, 1952; M.S. in L.S., *ibid.*, 1953. (1953-)

BEVAN. LAURENCE A., *Director of the Cooperative Extension Service*
B.S., Massachusetts Agricultural College, 1913. (1946-)

BINGHAM, SYLVESTER H., *Professor of English*
A.B., Dartmouth College, 1922; A.M., Harvard University, 1929; Ph.D., Yale University, 1937. (1936-)

BLACK, MARILYN R., *Instructor in Physical Education for Women and Extension Recreation Specialist*
B.S., Pennsylvania State College, 1952. (1952-)

BLANCHARD, FLETCHER A., JR., *Assistant Professor of Electrical Engineering*
B.S. in E.E., Union College. 1948; M.S. in E.E., Lehigh University, 1950. (1950-)

BLANCHARD, JOAN L., *Instructor in Physical Education for Women*
B.S., University of Maine, 1952. (1952-)

BLEECKER, C. VINCENT, *Instructor in Music*
B.M., University of Kansas, 1947; M.M., *ibid.*, 1949. (1951-)

BLEWETT, EDWARD Y., *Dean of the College of Liberal Arts*
B.A., University of New Hampshire, 1926; M.A., Ohio State University, 1940. (1927-)

†BLICKLE, ROBERT L,. *Associate Professor of Entomology*
B.S., Ohio State University, 1937; M.S., University of New Hampshire, 1939; Ph.D., Ohio State University, 1942. (1938-41, 1946-)

Blood, Edward J., *Assistant Professor of Physical Education and Athletics*
B.S., University of New Hampshire, 1935. (1936-)

†*Blood, Paul T., *Assistant Professor of Agronomy*
B.S., New Hampshire College, 1921; M.S., University of New Hampshire, 1924. (1921-24, 1928-)

Boston, Clarence E., *Associate Professor of Education and Athletics and Head Football Coach*
A.B., Harvard College, 1939. (1949-)

Bourne, Elizabeth, *Club Agent in Rockingham County*
Diploma, Framingham Normal School, 1924. (1926-)

Bower, Warren C., *Psychologist, Counseling Service and Instructor in Psychology*
B.A., Columbia College, 1938; M.A., Columbia University, 1939. (1948-)

Bowler, Edmond W., *Professor of Civil Engineering*
S.B. in Sanitary Engineering, Massachusetts Institute of Technology, 1914. (1920-)

†Bowring, James R., *Associate Professor of Agricultural Economics*
B.S.A., University of Manitoba, 1936; M.A., University of Alberta, 1941; Ph.D., Iowa State College, 1944. (1948-)

*†Boynton, C. Hilton, *Professor of Dairy Husbandry*
B.S., Iowa State College, 1934; M.S., *ibid.*, 1940. (1945-)

Brackett, Thelma, *Librarian*
A.B., University of California, 1919; Certificate, California State Library School, 1920. (1942-)

Bratton, Karl H., *Professor of Music*
B.M., University of Kansas, 1931; M.A., Teachers College, Columbia University, 1945. (1945-)

Breck, Robert W., *County Forester in Hillsborough County*
B.S., University of New Hampshire, 1940; M.F., Yale School of Forestry, 1941. (1947-)

Breon, Theodore F., *County Forester in Carroll County*
B.S., Pennsylvania State College, 1929. (1942-)

Brett, Wesley F., *Assistant Professor of The Arts*
B.Ed., Keene Teachers College, 1937; M.Ed., University of New Hampshire, 1949. (1942-)

Broad, Louis G., Jr., *First Lieutenant, Infantry, Instructor in Military Science and Tactics*
North Texas Agricultural College; Southern Methodist University. (1951-)

Browne, Evelyn, *Associate Professor of Physical Education for Women*
A.B., University of California, 1942; M.A., Teachers College, Columbia University, 1943. (1943-)

Bullock, Wilbur L., *Associate Professor of Zoology*
B.S., Queens College, 1942; M.S., University of Illinois, 1947; Ph.D., *ibid.*, 1948. (1948-)

Burke, L. Morrill, Jr., *Instructor in English*
A.B., Bowdoin College, 1949; M.A., University of Washington, 1951. (1953-)

†Burkett, Winfred K., *Associate Professor of Agricultural Economics*
B.S., University of Illinois, 1936; M.A., Michigan State College, 1940; Ph.D., University of Wisconsin, 1948. (1948-)

Bushong, Richard S., *Captain, United States Air Force, Instructor in Air Science and Tactics*
B.A., St. John's University, 1949. (1951-)

Call, Reginald, *Assistant Professor of English*
A.B., Columbia University, 1933; A.M., *ibid.*, 1941. (1951-)

Campbell, Willis C., *Research Associate, Engineering Experiment Station*
B.S., New Hampshire College, 1906. (1943-)

Carroll, Harry R., *Administrative Assistant*
B.A., University of New Hampshire, 1950; M.A., *ibid.*, 1951. (1951-)

Carroll, Herbert A., *Professor of Psychology*
A.B., Bates College, 1923; A.M., Brown University, 1928; Ph.D., Columbia University, 1930. (1941-)

Casas, R. Alberto, *Associate Professor of Languages*
B. en L., Universidad de Barcelona, 1936; A.M., Columbia University, 1947. (1952-)

Chapman, Donald H., *Professor of Geology*
B.A., University of Michigan, 1927; M.A., *ibid.*, 1928; Ph.D., *ibid.*, 1931. (1931-)

Charron, Frederick E., *Captain, United States Army, Instructor in Military Science and Tactics*
B.S. in Ed., University of New Hampshire, 1943. (1953-)

Chase, Jere A., *Executive Secretary, New Hampshire Memorial Union Fund*
B.S., University of New Hampshire, 1936; M.Ed., *ibid.*, 1946. (1946-)

Clark, David G., *Associate Professor of Physics*
B.A., Park College, 1938; M.S., Texas A. & M. College, 1940; Ph.D. Pennsylvania State College, 1947. (1947-)

Clark, Harriet L., *Home Demonstration Agent in Belknap County*
B.S., Framingham State Teachers College, 1942. (1946-)

Clark, William E., *Assistant Professor of Mechanical Engineering, Machine Shop*
B.S., University of New Hampshire, 1931. (1946-)

Clement, William D., *Assistant Professor of Mechanical Engineering*
B.S., University of New Hampshire, 1942. (1946-)

Colby, Halstead N., *Extension Associate Professor of Agricultural Engineering*
B.S., University of New Hampshire, 1930. (1946-)

Colby, Perley D., *Assistant Agricultural Agent in Hillsboro County*
B.S., University of New Hampshire, 1952. (1953-)

Colby, Stanley W., *Agricultural Agent in Sullivan County*
B.S., University of New Hampshire, 1934. (1940-)

†Collins, Walter M., *Assistant Professor of Poultry Husbandry*
B.S., University of Connecticut, 1940; M.S., *ibid.*, 1949. (1951-)

Colovos, Nicholas F., *Research Associate Professor of Dairy Husbandry*
B.S., University of New Hampshire, 1927; M.S., *ibid.*, 1931. (1928-)

Comerford, Edward V., *Agricultural Agent in Cheshire County*
B.S., University of New Hampshire, 1937. (1948-)

Congdon, Robert G., *Part-time Instructor in Psychology*
A.B., University of California, 1947. (1952-)

†Conklin, James G., *Professor of Entomology*
B.S., Connecticut Agricultural College, 1926; M.S., University of New Hampshire, 1929; Ph.D., Ohio State University, 1941. (1931-)

Conkling, Randall M., *Assistant Professor of Mathematics*
B.S., Bucknell University, 1948; M.S., *ibid.*, 1949; Ph.D., University of Florida, 1952. (1952-)

†CORBETT, ALAN C., *Associate Professor of Poultry Husbandry*
B.S., University of Maine, 1936; M.S., *ibid.*, 1937; D.V.M., Michigan State College, 1940. (1941-)

CORROW, HENRY W., JR., *Associate Extension Editor*
B.S., Boston University, 1948. (1953-)

CORTEZ, EDMUND A., *Professor of Speech*
B.A., Taylor University, 1923; B.O., Asbury College, 1924; B.D., Asbury Theological Seminary, 1924; M.A., Columbia University, 1926; Ed.M., Harvard University, 1927. (1927-)

COULES, JOHN, *Instructor in Psychology*
A.B., Boston University, 1949; A.M., *ibid.*, 1950; Ph.D., *ibid.*, 1953. (1953-)

CRABTREE, J. BRUCE, *Assistant Professor of Mathematics*
A.B., University of Kansas, 1941; M.A., *ibid.*, 1942; Ph.D., Harvard University, 1950. (1950-)

CROWELL, CAROLYN, *Assistant Club Agent in Hillsborough County*
B.S. in Ed., Framingham State Teachers College, 1948. (1948-)

CRYESKY, RALPH H., *Instructor in Languages*
B.A., University of Buffalo, 1947; M.A., Harvard University, 1949; Ph.D., *ibid.*, 1953. (1951-)

CUNNINGHAM, FREDERIC, JR., *Assistant Professor of Mathematics*
B.S., Harvard University, 1943; M.A., *ibid.*, 1947; Ph.D., *ibid.*, 1953. (1951-)

CURRAN, EILEEN M., *Instructor in English*
B.A., Cornell University, 1948; Honours B.A., Cambridge University (England), 1950. (1951-)

DAGGETT, ALBERT F., *Professor of Chemistry*
B.S., University of New Hampshire, 1928; M.S., *ibid.*, 1930; Ph.D., Columbia University, 1934. (1928-31, 1935-)

DAGGETT, G. HARRIS, *Associate Professor of English*
A.B., Cornell University, 1928; M.A., *ibid.*, 1929; Ph.D., University of North Carolina, 1941. (1942-)

DANOFF, ALEXANDER P., *Assistant Professor of Languages*
A.B., New York University, 1928; A.M., *ibid.*, 1929. (1948-)

DAVIS, HENRY A., *Research Assistant Professor of Agricultural and Biological Chemistry*
B.S., University of New Hampshire, 1932; M.S., *ibid.*, 1934. (1932-)

DAVIS, MARION S., *Home Demonstration Agent in Sullivan County*
B.E., Keene Normal School, 1929. (1937-)

DAVIS, MYRA L., *Assistant Professor of Secretarial Studies*
B.S., Central Missouri State Teachers College, 1939; M.A., State University of Iowa, 1945. (1945-)

DAVIS, ROBERT B., *Assistant Professor of Mathematics*
S.B., Massachusetts Institute of Technology, 1946; S.M., *ibid.*, 1948; Ph.D., *ibid.*, 1951. (1951-)

DAWSON, CHARLES O., *Professor of Civil Engineering*
B.C.E., Ohio State University, 1930; M.S., *ibid.*, 1940. (1930-)

DE BAUN, VINCENT C., *Instructor in English*
B.A., Union College, 1947; M.A., Rutgers University, 1950. (1952-)

DEGLER, CARROLL M., *Professor of Economics*
A.B., University of Kansas, 1925; M.B.A., New York University, 1927. (1928-)

DEYOE, DANIEL H., *Assistant Director of the University Health Service*
A.B., Union College, 1930; M.D., Albany (N.Y.) Medical College, 1933. (1952-)

DISHMAN, ROBERT B., *Associate Professor of Government*
A.B., University of Missouri, 1939; A.M., *ibid.*, 1940; Ph.D., Princeton University, 1948. (1951-)

DODDS, JOHN A., *Assistant Professor of Dairy Husbandry, Thompson School of Agriculture*
B.S. in Agric., University of Vermont, 1936. (1953-)

DOLE, WINSTON R., *Captain, United States Air Force, Instructor in Air Science and Tactics*
B.A., University of New Hampshire, 1951. (1951-)

†DONAHUE, ROY L., *Professor of Agronomy*
B.S. in Agric., Michigan State College, 1932; Ph.D., Cornell University, 1939. (1952-)

DONALD, MARY JEAN, *Reference Librarian*
B.Sc., McGill University, 1945; B.L.S., *ibid.*, 1946. (1951-)

DONOVAN, EDWARD T., *Professor of Mechanical Engineering*
B.S., University of Wisconsin, 1921. (1926-)

*†DOUGHERTY, LAWRENCE A., *Assistant Professor of Agricultural Economics*
B.S., Purdue University, 1921. (1930-) (Leave of absence, May-Nov., 1954.)

DOWD, ROBERT J., *Assistant Professor of Psychology*
B.S., University of New Hampshire, 1943; M.A., *ibid.*, 1948. (1948-)

DREW, ESTHER S., *Assistant Professor of The Arts*
B.S., University of New Hampshire, 1945. (1950-)

DUNCAN, LILLIAN R., *Loan Librarian*
B.A., University of Oklahoma, 1933. (1934-38, 1945-47, 1948-)

DUNLOP, WILLIAM R., *Research Assistant Professor of Poultry Husbandry*
D.V.M., V.S., Ontario Veterinary College, 1938. (1950-)

†DUNN, GERALD M., *Assistant Professor of Agronomy*
B.S. in Agr. Science, West Virginia University, 1948; M.S., Purdue University, 1950; Ph.D., *ibid.*, 1951. (1951-)

†DUNN, STUART, *Associate Professor of Botany*
B.S., University of Minnesota, 1923; M.S., Iowa State College, 1925; Ph.D., University of Minnesota, 1931. (1926-)

DURGIN, OWEN B., *Instructor in Sociology*
B.S.Ed., Gorham State Teachers College, 1946; M.A., University of New Hampshire, 1951. (1950, 1951-)

DUSSAULT, WILLIAM E., *County Forester in Cheshire-Sullivan Area*
B.S., University of New Hampshire, 1937. (1945-)

EDDY, EDWARD D., JR., *Assistant to the President and Director of University Development*
B.A., Cornell University, 1944; B.D., Yale University, 1946. (1949-)

EDGERLY, IVAN C., *Club Agent in Hillsborough County*
B.S., University of Maine, 1950. (1953-)

EDWARDS, CHARLES P., *Instructor in Government*
B.S., Bowdoin College, 1941; A.M., Fletcher School of Law and Diplomacy, 1946. (1953-)

Eggert, Russell, *Research Associate Professor of Horticulture*
B.S., Michigan State College, 1929; M.S., *ibid.*, 1939. (1944-46, 1948-)

Ellis, Elizabeth E., *Extension Associate Professor of Home Economics*
B.S., Teachers College, Columbia University, 1927; M.A., *ibid.*, 1929. (1929-)

Ericson, R. June, *Assistant Professor of Home Economics*
B.S., University of Nebraska, 1939; M.A., Michigan State College, 1949. (1952-)

Falle, George G., *Assistant Professor of English*
B.A., McGill University, 1935; M.A., *ibid.*, 1937; Ph.D., University of Wisconsin, 1952. (1951-)

Farrar, Norma, *Project Director, Office of University Development, and Coordinator of Religious Activities, Division of Student Personnel*
B.A., University of New Hampshire, 1951; M.A., Teachers College, Columbia University, 1952. (1953-)

Faulkner, James C., *Assistant Professor of Languages*
B.L., France, 1937; C.E.S., France, 1937; D.I.O., Université de Paris, 1938; M.A., Université Laval, 1947; D.Un., *ibid.*, 1950. (1948-)

Fenton, Austen W., *Agricultural Agent in Carroll County*
B.A., University of New Hampshire, 1932. (1942-)

Fenton, Paul J., *Agricultural Agent in Merrimack County*
B.S., University of New Hampshire, 1929. (1952-)

Fillion, Patricia H., *Home Demonstration Agent in Merrimack County*
B.S., University of New Hampshire, 1952. (1952-)

Finlayson, Alec W., *Instructor in English*
B.A., University of Richmond, 1949; M.A., Columbia University, 1950. (1953-)

Fisher, Leonard A., *Assistant Professor of Mechanical Engineering*
B.S. (M.E.), University of New Hampshire, 1948. (1948-)

Funkhouser, James A., *Professor of Chemistry*
B.S., Carnegie Institute of Technology, 1925; Ph.D., Ohio State University, 1930. (1930-)

Garretson, Robert L., *Instructor in Music*
A.B., Colorado State College of Education, 1942; M.A., *ibid.*, 1948; Professional Diploma, Teachers College, Columbia University, 1951. (1953-)

Gibson, Lee B., *Instructor in Geology*
B.A., Washington University, 1949; M.A., *ibid.*, 1952. (1953-)

Gifford, Eleanor G., *Home Demonstration Agent in Hillsborough County*
B.S., State Teachers College, Framingham, Massachusetts, 1927. (1950-)

Gilman, Paul A., *Associate Professor of Farm Mechanics, Thompson School of Agriculture*
B.S., University of Vermont, 1938. (1945-)

Gilmore, Robert C., *Instructor in History*
A.B., University of Vermont, 1944; M.A., McGill University, 1947; M.A., Yale University, 1951. (1952-)

Goffe, Lewis C., *Assistant Professor of English*
B.S., University of New Hampshire, 1935; M.A., *ibid.*, 1946 (1946-)

Goodrich, Mary R., *Part-time Assistant in Occupational Therapy*
B.S., University of New Hampshire, 1945. (1951-)

Gordon, Carol E., *Assistant Professor of Physical Education for Women*
B.A., Oberlin College, 1948. (1948-)

Granger, Ralph H., *Associate Professor of Poultry Husbandry, Thompson School of Agriculture*
B.S., Massachusetts State College, 1935; M.S., *ibid.*, 1939. (1946-)

Grant, Clarence L., *Instructor in Chemistry*
B.S., University of New Hampshire, 1951. (1952-)

Grinnell, Harold C., *Dean of the College of Agriculture and Director of the Agricultural Experiment Station*
B.S., Cornell University, 1921; M.S., *ibid.*, 1930; Ph.D., *ibid.*, 1941. (1932-)

Haendler, Helmut M., *Professor of Chemistry*
B.S., Northeastern University, 1935; Ph.D., University of Washington, 1940. (1945-)

Hall, Harry H., *Professor of Physics*
B.S., Union College, 1926; Ph.D., Harvard University, 1934. (1940-)

Hall, Raymond C., *Agricultural Agent in Coos County*
B.S., University of New Hampshire, 1950. (1950-)

Harrington, James B., *Captain, United States Army, Instructor in Military Science and Tactics*
B.S., United States Military Academy, 1945. (1953-)

Harris, Marion S., *Home Demonstration Agent in Carroll County*
B.S.E., State Teachers College, Framingham, Massachusetts, 1928. (1952-)

Hartwell, William H., *Associate Professor of Physics*
B.S., Boston University, 1924; M.A., Wesleyan University, 1927. (1929-)

Haslerud, George M., *Associate Professor of Psychology*
B.A., University of Minnesota, 1930; Ph.D., *ibid.*, 1934. (1945-)

Hatch, John W., *Assistant Professor of The Arts*
Diploma, Massachusetts School of Art, 1941; B.F.A., Yale University School of the Fine Arts, 1948; M.F.A., *ibid.*, 1949. (1949-)

Hauslein, John D., *Associate Professor of Business Administration*
B.A., Yale University, 1916; M.A., *ibid.*, 1920. (1926-)

Heald, L. Franklin, *University Editor*
B.A., University of New Hampshire, 1939. (1948-)

Hennessy, William G., *Professor of English*
A.B., Boston University, 1916; A.M., *ibid.*, 1924. (1923-)

†**Henry, William F.**, *Professor of Agricultural Economics*
B.S., Louisiana State University, 1940; M.S., University of Connecticut, 1942. (1952-)

***Hepler, Jesse R.**, *Associate Professor of Horticulture*
B.S., Pennsylvania State College, 1911; M.S., University of Wisconsin, 1922. (1917-)

†**Higgins, Leroy J.**, *Associate Professor of Agronomy*
B.S., University of New Hampshire, 1923. (1927-28, 1929-)

Hitchcock, Leon W., *Professor of Electrical Engineering*
B.S., Worcester Polytechnic Institute, 1908. (1910-)

†**Hodgdon, Albion R.**, *Professor of Botany*
B.S., University of New Hampshire, 1930; M.S., *ibid.*, 1932; Ph.D., Harvard University, 1936. (1930-32, 1936-)

HOGAN, JOHN A., *Professor of Economics*
A.B., University of Washington, 1932; A.M., *ibid.*, 1934; M.A., Harvard University, 1948; Ph.D., *ibid.*, 1952. (1947-)

HOITT, SAMUEL W., *Associate Director, Cooperative Extension Service and Supervisor of Bulletin Information*
B.S., University of New Hampshire, 1928; M.S., *ibid.*, 1931. (1929-)

HOLDEN, JOHN T., *Professor of Government*
A.B., Wesleyan University, 1936; M.P.A., Harvard University, 1941; M.A., *ibid.*, 1942; Ph.D., *ibid.*, 1943. (1947-) (Leave of absence, 1954-55.)

HOLLE, PAUL A., *Instructor in Zoology*
A.B., Valparaiso University, 1947; M.S., Notre Dame University, 1949. (1950-)

HRABA, JOHN B., *Assistant Professor of Electrical Engineering*
B.S., University of New Hampshire, 1948; M.Eng., Yale University, 1949. (1949-)

HUDDLESTON, ERIC T., *Professor of Architecture*
B.Arch., Cornell University, 1910. (1914-)

†HUSCH, BERTRAM, *Associate Professor of Forestry*
B.S., New York State College of Forestry, 1943; M.F., *ibid.*, 1947; Ph.D., University of Michigan 1952. (1951-)

IDDLES, HAROLD A., *Professor of Chemistry*
B.S., Michigan State College, 1918; M.S., University of Iowa, 1921; Ph.D., Columbia University, 1925. (1929-)

JACOBS, ELIZABETH M., *Home Demonstration Agent in Coos County*
B.S., University of New Hampshire, 1949. (1949-)

JERVIS, FREDERICK M., *Psychologist, Counseling Service*
B.A., University of New Hampshire, 1948; M.A., *ibid.*, 1949. (1952-)

JOHNSON, ARTHUR W., *Professor of Business Administration*
B.B.A., College of Business Administration, Boston University, 1922; M.B.A., *ibid.*, 1929; C.P.A. (1920-)

JOHNSON, GIBSON R., *Associate Professor of History*
A.B., Muskingum College, 1916; M.A., Princeton University, 1920; Ph.D., University of Edinburgh, 1922. (1932-)

JUDKINS, BEATRICE A., *State Home Demonstration Leader*
B.S., Keene Teachers College, 1937. (1945-)

KARAS, JOHN A., *Assistant Professor of Physics*
B.S., Lehigh University, 1943; M.S., *ibid.*, 1947. (1950-)

†KARDOS, LOUIS T., *Associate Professor of Agronomy*
B.S., Rutgers University, 1932; M.S., *ibid.*, 1934; Ph.D., *ibid.*, 1937. (1943-)

KATZ, BENJAMIN J., *Assistant Professor of Economics*
A.B., Brooklyn College, 1946; A.M., Harvard University, 1949. (1949-)

†KATZ, EDWARD, *Assistant Professor of Bacteriology*
B.A., Washington Square College, New York University, 1947; Ph.D., Rutgers University, 1951. (1951-)

KAUPPINEN, TENHO S., *Associate Professor of Mechanical Engineering*
B.S., University of New Hampshire, 1939; M.S., *ibid.*, 1947. (1939-)

†KEENER, HARRY A., *Professor of Dairy Husbandry*
B.S., Pennsylvania State College, 1936; M.S., West Virginia University, 1938; Ph.D., Pennsylvania State College, 1941. (1941-)

Kehoe, Ray E., *Assistant Professor of Education*
A.B., University of Wisconsin, 1941; M.A., University of Michigan, 1948; Ph.D., *ibid.*, 1952. (1953-)

Kelly, Eugene J., *Major, United States Air Force, Assistant Professor of Air Science and Tactics*
B.S., Panzer College, 1932; M.Ed., Rutgers University, 1947. (1951-)

Kennedy, Robert C., *Associate Professor of Horticulture, Thompson School of Agriculture*
B.V.A., Massachusetts State College, 1940. (1941-)

Kerr, Robert W., *Assistant Professor of Physical Education and Athletics*
A.B., Western Michigan College, 1945; M.A., University of Michigan, 1946. (1952-)

Kichline, William L., *Associate Professor of Mathematics*
B.A., Lehigh University, 1924; M.S., *ibid.*, 1928. (1931-)

Kimball, Robert O., *Assistant Professor of Mathematics*
B.S., University of New Hampshire, 1941; M.A., *ibid.*, 1952. (1946-)

Kirby, Frank E., *Major, United States Air Force, Assistant Professor of Air Science and Tactics*
Keene Normal School, Sacramento State College. (1951-)

Knapp, David C., *Assistant Professor of Government*
A.B., Syracuse University, 1947; A.M., University of Chicago, 1948; Ph.D., *ibid.*, 1953. (1953-)

Koch, Wayne S., *Associate Professor of Education*
B.S., Muhlenberg College, 1941; Ed.M., Harvard University, 1945. (1945-)

Korbel, John, *Assistant Professor of Economics*
S.B., Harvard College, 1939; M.B.A., Harvard University, 1941. (1950-)

Kuivila, Henry G., *Associate Professor of Chemistry*
B.Sc., Ohio State University, 1942; M.A., *ibid.*, 1944; Ph.D., Harvard University, 1948. (1948-)

Kuusisto, Allan A., *Assistant Professor of Government*
A.B., Wittenberg College, 1942; A.M., Harvard University, 1948; Ph.D., *ibid.*, 1950. (1948-)

†**Latimer, L. Phelps**, *Associate Professor of Horticulture*
B.S., University of California, 1921; M.S., *ibid.*, 1922; Ph.D., *ibid.*, 1926. (1926-)

Lavine, Irvin, *Professor of Chemical Engineering, Part-time*
B.S., University of Minnesota, 1924; Ph.D., *ibid.*, 1930. (1948-49, 1951-)

Leaver, Eugene H., *Assistant Superintendent of Properties and Supervising Architect*
B.S. in Arch., University of New Hampshire, 1943. (1949-)

Leavitt, Harold I., *Superintendent of Properties*
B.S., New Hampshire College, 1921; M.Ed., University of New Hampshire, 1936; M.A., Columbia University, 1940. (1928-)

Leighton, Roger S., *County Forester in Belknap-Strafford Area*
B.S. in Forestry, University of New Hampshire, 1941. (1952-)

Lenaghan, Natalie A., *Instructor in English*
B.A., State University of Iowa, 1951; M.A., *ibid.*, 1952. (1953-)

Lepke, Arno K., *Assistant Professor of Languages*
Ph.D., University of Marburg, Germany, 1947. (1949-)

†Light, Anna M., *Professor of Home Economics*
B.S., Pennsylvania State College, 1933; M.A., Teachers College, Columbia University, 1939; Ph.D., Pennsylvania State College, 1950. (1952-)

Littlefield, Ralph B., *Extension Assistant Professor of Agronomy and County Agent Leader*
B.S., University of New Hampshire, 1927. (1940-)

Lockwood, John A., *Associate Professor of Physics*
A.B., Dartmouth College, Thayer School of Engineering, 1941; M.S., Lafayette College, 1943; Ph.D., Yale University, 1948. (1948-)

Long, David F., *Associate Professor of History*
A.B., Dartmouth College, 1939; A.M., Columbia University, 1946; Ph.D., *ibid.*, 1950. (1948-)

†Loughlin, Margaret E., *Instructor in Agricultural and Biological Chemistry*
A.B., Regis College, 1942. (1951-)

Lundholm, Carl, *Director and Professor of Physical Education and Athletics*
B.S., New Hampshire College, 1921; M.A., Columbia University, 1939. (1928-)

†Lyford, Walter H., *Soil Surveyor*
B.S., University of New Hampshire, 1930; M.S., *ibid.*, 1932. (1938-1942, 1949-)

Lyle, Gloria G., *Part-time Instructor in Chemistry*
B.A., Vanderbilt University, 1944; M.S., Emory University, 1946. (1951-)

Lyle, Robert E., Jr., *Associate Professor of Chemistry*
B.A., Emory University, 1945; M.S., *ibid.*, 1946; Ph.D., University of Wisconsin, 1949. (1951-)

Lyon, Carolyn E., *Extension Assistant Professor of Home Economics*
B.S., Carnegie Institute of Technology, 1931. (1951-)

MacDonald, John A., *Director of the University Health Service*
B.Sc., St. Francis Xavier University, 1933; M.D., C.M., Dalhousie University, 1945. (1950-)

MacKinnon, Elizabeth, *Instructor in Physical Education for Women*
B.A., Smith College, 1950; M.A., Teachers College, Columbia University, 1951. (1953-)

MacPherson, Keith B., *Instructor in Civil Engineering*
B.S. in C.E., University of New Hampshire, 1950. (1950-)

Magrath, Raymond C., *Treasurer*
Burdett College, 1916. (1920-)

Majchrzak, Elaine R., *Assistant Professor of Music*
B.M., Eastman School of Music, University of Rochester, 1945; M.M., *ibid.*, 1948. (1946-) (Leave of absence, 1954-55.)

Manning, William E., *Major, United States Army, Assistant Professor of Military Science and Tactics*
B.A., Holy Cross College, 1943. (1953-)

Manton, Robert W., *Professor of Music*
Harvard University, 1918. (1923-)

Marshall, Thomas O., *Professor of Education*
A.B., Colgate University, 1929; Ed.M., University of Buffalo, 1933; Ed.D., Harvard University, 1941. (1947-)

Marston, Philip M., *Professor of History*
B.A., University of New Hampshire, 1924; M.A., *ibid.*, 1927. (1924-)

Martin, Horace S., Jr., *Assistant Professor of Physical Education and Athletics*
B.S., University of New Hampshire, 1941; M.Ed., *ibid.*, 1953. (1948-)

Masters, Sylvia, *Instructor in Physical Education for Women*
B.A., Hunter College, 1952; M.A., New York University, 1953. (1953-)

Maynard, Max S., *Assistant Professor of English*
B.A., University of British Columbia, 1937. (1946-)

McDowell, Horace G., Jr., *Instructor in Geography*
A.B., Miami University, 1949; M.A., University of Nebraska, 1950. (1950-)

McIntire, Paul H., *Director of Counseling and Assistant Professor of Psychology*
B.A., University of New Hampshire, 1942; A.M., Boston University, 1945. (1946-)

Meader, Elwyn M., *Research Associate Professor of Horticulture*
B.S., University of New Hampshire, 1937; M.S., Rutgers University, 1941. (1948-)

Medesy, William A., *Associate Dean of Students*
B.S., Purdue University, 1931; M.F., Yale University, 1933; M.A., Columbia University, 1950; Ed.D., *ibid.*, 1952. (1940-)

Menge, Carleton P., *Associate Professor of Education*
B.S., Springfield College, 1939; M.A., University of Chicago, 1940; Ph.D., *ibid.*, 1948. (1948-)

Merritt, Richard D., *Assistant Professor of The Arts and University Photographer*
Rochester Institute of Technology, 1948. (1948-)

Meyers, T. Ralph, *Professor of Geology*
B.A., Ohio State University, 1926; M.A., *ibid.*, 1929. (1927-)

Millard, Ben, *Assistant Professor of Chemistry*
B.Sc., University of Bristol, England, 1942; Ph.D., *ibid.*, 1948. (1950-)

Miller, Edmund G., *Instructor in English*
A.B., Dartmouth College, 1943; M.A., Columbia University, 1947. (1951-)

†Miller, Scott A., Jr., *Assistant Professor of Agronomy*
A.B., Doane College, 1943; M.S., University of Nebraska, 1950; Ph.D., *ibid.*, 1953. (1953-)

Mills, Marian E., *Assistant Professor of Botany*
B.S., Teachers College, Columbia University, 1917; M.A., *ibid.*, 1920. (1927-)

Milne, Lorus J., *Professor of Zoology*
B.A., University of Toronto, 1933; M.A., Harvard University, 1934; Ph.D., *ibid.*, 1936. (1948-)

Milne, Margery J., *Honorary Fellow in Zoology*
A.B., Hunter College, 1933; M.A., Columbia University, 1934; M.A., Radcliffe College, 1936; Ph.D., *ibid.*, 1939. (1948-)

Mitiguy, Harry R., *Agricultural Agent in Hillsborough County*
B.S. in Agriculture, Cornell University, 1944. (1952-)

Moehl, Karl J., *Instructor in The Arts*
B.F.A., University of Colorado, 1950; M.F.A., State University of Iowa, 1952. (1953-)

MONSON, JOHN M., *Captain, United States Air Force, Instructor in Air Science and Tactics*
North Dakota State College, Hardin College, Mercer University. (1951-)

MOORADIAN, ANDREW T., *Instructor in Physical Education and Athletics*
B.S., University of New Hampshire, 1948. (1950-)

MOORE, GEORGE M., *Professor of Zoology*
A.Sc., University of the City of Toledo, 1926; B.S., Otterbein College, 1928; M.S., University of Michigan, 1932; Ph.D., *ibid.*, 1938. (1944-)

†MOORE, HERBERT C., *Associate Professor of Dairy Husbandry*
B.S., Purdue University, 1923; M.S., University of Minnesota, 1925. (1928-)

†MORROW, KENNETH S., *Professor of Dairy Husbandry*
B.S., University of Minnesota, 1918; M.S., *ibid.*, 1925. (1934-)

MORSE, WALLACE J., *Research Assistant in Entomology*
B.S., University of New Hampshire, 1943. (1943-)

MOSS, HERBERT J., *Dean of the Graduate School, Director of Summer Session, Associate Professor of Sociology, and Coordinator of Research*
A.B., Wesleyan University, 1931; A.M., Harvard University, 1932; Ph.D. *ibid.*, 1938. (1946-) (Leave of absence, 1954-55.)

MURDOCH, JOSEPH B., *Instructor in Electrical Engineering*
B.S. in E.E., Case Institute of Technology, 1950. (1952-)

MYERS, NORMAN W., *Assistant Treasurer*
B.S., University of New Hampshire, 1950. (1953-)

NASON, HARRIET B., *Supervising Nurse*
R.N., Wentworth Hospital, Dover, N. H., 1935. (1942-)

†NAST, CHARLOTTE G., *Associate Professor of Botany*
B.A., University of Wisconsin, 1927; M.A., *ibid.*, 1929; Ph.D., University of California, 1948. (1948-)

NEWMAN, BARBARA K., *Assistant Professor of Physical Education for Women*
B.S., Russell Sage College, 1939; M.Ed., St. Lawrence University, 1948. (1948-)

NIELSON, A. MELVILLE, *Assistant Professor of Sociology*
B.S. in Educ., Bowling Green State University, 1942; M.A., Ohio State University, 1947. (1950-)

NOTHMANN, GERHARD S., *Counsulting Psychiatrist*
M.D., University of Bern, 1938. (1952-)

NULSEN, WILLIAM B., *Professor of Electrical Engineering*
B.S., California Institute of Technology, 1918; M.S., University of New Hampshire, 1930. (1926-)

O'CONNELL, ELIAS M., *Instructor in Mechanical Engineering*
Graduate, Wentworth Institute, course in forging, hardening and tempering. 1923; Graduate, two-year course in pattern making, *ibid.*, 1925. (1925-)

OLNEY, AUSTIN L., *Assistant Professor of Education and Specialist in Audio-Visual Education*
B.S., Central Michigan College of Education, 1937; M.Ed., University of Vermont, 1946. (1946-)

O'LOANE, J. KENNETH, *Assistant Professor of Chemistry*
B.Sc., St. Benedict's College, 1935; M.Sc., University of Washington, 1943; A.M., Harvard University, 1947; Ph.D., *ibid.*, 1950. (1948-)

Olsson, Gunnar B., *Extension Assistant Professor of Dairy Husbandry*
B.S., New Hampshire College, 1922. (1944-)

Owen, Allan, *Instructor in Music*
B.M., Cincinnati Conservatory of Music, 1950; M.M., *ibid.*, 1950. (1950-)

Owen, Margaret, *Order Librarian*
A.B., Mount Holyoke College, 1919. (1943-)

†Palmer, Robert S., *Assistant Professor of Agricultural Engineering*
B.S. in Agric. Eng., Oklahoma Institute of Technology, 1953. (1953-)

Parker, Clifford S., *Professor of Languages*
A.B., Harvard University, 1912; A.M., *ibid.*, 1914; Ph.D., Columbia University, 1925. (1931-)

Partlow, Robert B., Jr., *Instructor in English*
A.B., Harvard College, 1941; M.A. in T., Harvard School of Education, 1947; A.M., Harvard University, 1948. (1949-)

Partridge, Allan B., *Associate Professor of History*
A.B., Clark University, 1922; A.M., *ibid.*, 1923. (1925-)

Patton, Willard G., *Club Agent in Cheshire County*
B.S., Massachusetts State College, 1939. (1945-)

Percival, Gordon P., *Research Associate Professor of Agricultural and Biological Chemistry*
B.S., Massachusetts Agricultural College, 1924; M.S., *ibid.*, 1926. (1926-)

Perkins, Donald M., *Assistant Professor of Mathematics*
B.S., University of New Hampshire, 1931; M.S., *ibid.*, 1933. (1931-)

Perkins, Vincent A., *Club Agent in Sullivan County*
B.S., New Hampshire College, 1916. (1946-)

Perry, Errol C., *Instructor in Farm Management, Thompson School of Agriculture*
B.S., Massachusetts State College, 1920. (1929-42, 1946-)

Pettibone, Marian H., *Assistant Professor of Zoology*
B.S., Linfield College, 1930; M.S., University of Oregon, 1932; Ph.D., University of Washington, 1947. (1953-)

†Phillips, Thomas G., *Professor of Agricultural and Biological Chemistry*
B.S., Ohio State University, 1912; M.S., *ibid.*, 1913; Ph.D., University of Chicago, 1918. (1925-)

Phipps, Robert H. K., *County Forester in Coos County*
B.S., University of New Hampshire, 1931. (1942-)

Plaisted, Frank H., *Associate Director, University Extension Service, and Extension Lecturer in Industrial Management*
B.S. in Eng., Worcester Polytechnic Institute, 1912. (1950-)

†Platts, Frances E., *Assistant Professor of Home Economics*
B.S., University of New Hampshire, 1933; M.Ed., *ibid.*, 1941. (1945-)

Potter, Kenneth H., *Major, United States Air Force, Assistant Professor of Air Science and Tactics*
Farmington State Teachers College, University of Maine. (1951-)

Poulin, Roger J., *Plant and Animal Sciences Librarian*
A.B., Assumption College, 1938; B.S. in L.S., Carnegie Library School, 1948. (1951-)

PRELL, ARTHUR E., *Instructor in Sociology*
A.A., Long Beach City College, 1947; B.A., University of Redlands, 1948; M.A., Washington University, 1949. (1953-)

†PRINCE, FORD S., *Professor of Agronomy*
B.S., University of Illinois, 1913. (1925-)

PRINCE, WILLIAM L., *University Alumni Secretary*
B.A., University of New Hampshire, 1930. (1946-)

PROCTOR, CHARLES A., *Club Agent in Belknap County*
B.S. in Ag. Ed., University of Vermont, 1950. (1952-)

PURINGTON, JAMES A., *Agricultural Agent in Rockingham County*
B.S., New Hampshire College, 1916; M.S., Massachusetts Agricultural College, 1920. (1920-)

RAND, M. ELIZABETH, *Assistant Professor of Home Economics*
A.B., Wheaton College, 1930; M.Ed., Boston University, 1946. (1948-)

RASMUSSEN, EDWIN J., *Extension Professor of Horticulture*
B.S., University of Wisconsin, 1927; M.S., *ibid.*, 1929. (1929-36, 1947-)

RAYNES, PAUL M., *Part-time Instructor in Institutional On-The-Farm Training Program*
B.S., University of New Hampshire, 1940. (1949-)

REED, LAWRENCE B., *Major, United States Air Force, Assistant Professor of Air Science and Tactics*
B.S. in B.A., Boston University, 1941. (1951-)

RETELLE, EVELYN A., *Assistant Club Agent in Merrimack County*
B.S. in Home Economics, University of Massachusetts, 1952. (1953-)

REUMAN, ARTHUR H., *Club Agent in Grafton County*
B.S., University of Vermont, 1953. (1953-)

RICE, H. GORDON, *Assistant Professor of Mathematics*
B.S., Massachusetts Institute of Technology, 1947; M. S., Syracuse University, 1949; Ph.D., *ibid.*, 1951. (1951-)

†RICH, AVERY E., *Associate Professor of Botany*
B.S. in Agronomy, University of Maine, 1937; M.S. in Plant Pathology, *ibid.*, 1939; Ph.D. in Plant Pathology, State College of Washington, 1950. (1941-43, 1950-)

RICH, WAYNE S., *Club Agent in Merrimack County*
B.S., University of Maine, 1934. (1946-)

RICHARDS, DONALD H., *Director of Admissions and Director of Placement*
B.A., University of New Hampshire, 1943. (1947-)

†RICHARDS, MATHIAS C., *Associate Dean of the College of Agriculture, Associate Director of the Agricultural Experiment Station, and Professor of Botany*
B.S., Utah State Agricultural College, 1932; Ph.D., Cornell University, 1938. (1941-)

RICHARDSON, EDYTHE T., *Associate Professor of Zoology*
B.S., New Hampshire College, 1922; M.S., University of New Hampshire, 1924. (1922-)

RICHARDSON, JOHN C., *Assistant Professor of English*
A.B., Dartmouth College, 1941; M.A., Columbia University, 1942. (1946-)

†RINGROSE, RICHARD C., *Professor of Poultry Husbandry*
B.S., Cornell University, 1932; Ph.D., *ibid.*, 1936. (1942-)

†Risley, Edward B., *Assistant Professor of Horticulture*
B.S., Massachusetts State College, 1946. (1948-)

Robinson, Frederick J., *Instructor in Mathematics*
B.S., University of New Hampshire, 1949. (1949-)

Roelofs, Gerrit H., *Instructor in English*
B.A., Amherst College, 1942; M.A., The Johns Hopkins University, 1951. (1951-)

Roper, Elizabeth R., *Club Agent in Carroll County*
B.A., University of New Hampshire, 1928. (1928-)

Rourke, Winnifred D., *Assistant Club Agent in Grafton County*
B.S. in Ed., State Teachers College, Framingham, Massachusetts, 1951. (1951-)

Rowles, Marjorie B., *Assistant Loan Librarian*
B.A., St. Lawrence University, 1945; B.S. in L.S., State Teachers College, Geneseo, N. Y., 1949; M.A., Middlebury College, 1950. (1953-)

Rutherford, Richard, *Agricultural Agent in Grafton County*
B.S., University of New Hampshire, 1940. (1941, 1948-)

Sackett, Everett B., *Dean of Students and Professor of Education*
B.A., Hamline University, 1923; M.A., University of Minnesota, 1925; Ph.D., Columbia University, 1931. (1938-)

Sanders, Barbara C., *Research Assistant in Dairy Husbandry*
B.S., University of New Hampshire, 1939. (1953-)

Sawyer, Albert K., *Instructor in Chemistry*
A.B., Colby College, 1940; M.S., University of Maine, 1947. (1949-)

Sawyer, Philip J., *Assistant Professor of Zoology*
B.S., University of New Hampshire, 1940; M.S., *ibid.*, 1948. (1952-)

Schaefer, Paul E., *Associate Dean of the College of Liberal Arts*
A.B., Bethany College, 1926; M.S., Ohio State University, 1931; Ph.D., *ibid.*, 1936. (1941-)

Scheier, Edwin, *Associate Professor of The Arts*
Art-Student League, 1928-30; New York School of Industrial Art, 1929-31. (1940-) (Leave of absence, first semester, 1954.)

Schenck, Cornelius W., *Extension Lecturer in Mathematics*
B.S. in M.E., Stevens Institute of Technology, 1946; M.S., *ibid.*, 1949. (1949-)

Schultz, J. Howard, *Associate Professor of English*
B.A., University of Texas, 1933; M.A., *ibid.*, 1934; M.A., Harvard University, 1939; Ph.D., *ibid.*, 1940. (1946-)

Scott, Frederic A., *Professor of Physics*
B.S., New York State College for Teachers, 1924; M.S., Lehigh University, 1929; Ph.D., Rice Institute, 1935. (1947-)

Seeley, Lauren E., *Dean of the College of Technology, Director of the Engineering Experiment Station, Professor of Mechanical Engineering*
Ph.B., Yale University, 1921; M.E., *ibid.*, 1924; LL.B., *ibid.*, 1935. (1945-)

Seiberlich, Joseph, *Research Associate Professor, Engineering Experiment Station*
Diploma Ingenieur, Technical University, Karlsruhe, Germany, 1924; Doctor Ingenieur, *ibid.*, 1928. (1941-)

SHAFER, JOSEPH E., *Professor of Economics*
B.S., DePauw University, 1925; M.A., University of Wisconsin, 1929; Ph.D., *ibid.*, 1932. (1946-)

†SHIMER, STANLEY R., *Professor of Agricultural and Biological Chemistry*
B.S., Muhlenberg College, 1918; M.S., Pennsylvania State College, 1923. (1924-)

SIESICKI, DAVID, *Instructor in Languages*
B.A., University of New Hampshire, 1950. (1951-)

SINCLAIR, ROBERT Y., *County Forester in Grafton County*
B.S., University of New Hampshire, 1939; M.F., Yale University, 1941. (1949-)

SKELTON, RUSSELL R., *Professor of Civil Engineering*
B.S. in Civil Engineering, Purdue University, 1924; C.E., *ibid.*, 1934; S.M. in Engineering, Harvard University, 1939. (1928-)

†SKOGLUND, WINTHROP C., *Professor of Poultry Husbandry*
B.S., University of New Hampshire, 1938; M.S., Pennsylvania State College, 1940. (1950-)

†SLANETZ, LAWRENCE W., *Professor of Bacteriology*
B.S., Connecticut State College, 1929; Ph.D., Yale University, 1932. (1932-)

SLOAN, ROGER P., *County Forester in Rockingham County*
B.S., University of New Hampshire, 1942. (1946-)

SMALL, RICHARD L., *Assistant Professor of Business Administration, Part-time*
A.B., Harvard University, 1916. (1947-)

SMITH, ALEXANDER F., *Instructor in Education*
B.A., Williams College, 1941; M. A., University of Connecticut, 1949; Ph.D., *ibid.*, 1953. (1953-)

SMITH, DAVID M., *Assistant Professor of Music*
Ed.B., Northern Illinois State Teachers College, 1939; M.A., Teachers College, Columbia University, 1947; Ed.D., *ibid.*, 1952. (1952-)

*†SMITH, GERALD L., *Assistant Professor of Animal Husbandry*
B.S., University of New Hampshire, 1948. (1948-) (Leave of absence, February-December, 1954.)

*†SMITH, WILLIAM W., *Associate Professor of Horticulture*
B.S., University of New Hampshire, 1924; M.S., *ibid.*, 1929; Ph.D., Michigan State College, 1935. (1936-)

SNIVELY, A. BARR, JR., *Assistant Professor of Physical Education and Athletics*
B.S., Princeton University, 1923; M.A., Columbia University, 1941. (1953-)

SNYDER, DOROTHY F., *Associate Dean of Students*
B.A., American University, 1944; M.A., George Washington University, 1948; Ph.D., University of Minnesota, 1953. (1953-)

SOLT, MARVIN R., *Professor of Mathematics*
B.S., Lehigh University, 1918; M.S., *ibid.*, 1925. (1926-)

STARKE, RAYMOND R., *Professor of Hotel Administration*
A.B., Boston University, 1921; A.M., Harvard University, 1926. (1921-24, 1926-)

STEARNS, WILLIAM M., *Director of the News Bureau*
Duke University, University of New Hampshire. (1948-)

Steele, Donald E., *Associate Professor of Music*
B.M., New England Conservatory of Music, 1946; M.A., Colorado College, 1952. (1946-)

†Stevens, Clark L., *Professor of Forestry*
B.S., New Hampshire College, 1917; M.F., Yale University, 1926; Ph.D., *ibid.*, 1930. (1919-)

Stevens, Henry B., *Director of University Extension Service*
A.B., Dartmouth College, 1912. (1918-)

Stewart, Glenn W., *Assistant Professor of Geology*
B.S., University of New Hampshire, 1935; M.S., Syracuse University, 1937. (1938-39, 1941-)

Stimson, Ruth G., *Home Demonstration Agent in Rockingham County*
B.S., University of New Hampshire, 1940; M.Ed., *ibid.*, 1944. (1942-)

Stolworthy, E. Howard, *Professor of Mechanical Engineering*
B.S., Tufts College, 1922. (1922-)

†Swain, Lewis C., *Professor of Forestry*
B.S., New Hampshire College, 1918; M.F., Harvard University, 1929. (1927-)

Swan, Emery F., *Associate Professor of Zoology*
B.S., Bates College, 1938; Ph.D., University of California, 1942. (1952-)

Swasey, Henry C., *Associate Professor of Physical Education and Athletics*
B.S., Amherst College, 1915; M.S., Indiana University, 1941. (1921-)

Sweet, Paul C., *Professor of Physical Education and Athletics*
B.S., University of Illinois, 1923; M.A., University of Southern California, 1941. (1924-)

†Teeri, Arthur E., *Associate Professor of Agricultural and Biological Chemistry*
B.S., University of New Hampshire, 1937; M.S., *ibid.*, 1940; Ph.D., Rutgers University, 1943. (1938-40, 1943-)

Thames, Sarah, *Assistant Professor of Home Economics and Manager and Dietitian, University Dining Hall*
B.S., Simmons College, 1930; M.A., Teachers College, Columbia University, 1942. (1945-)

Thomas, George R., *Professor of The Arts*
B.Arch, Carnegie Institute of Technology, 1930. (1930-)

Thompson, Wilbur E., *County Forester in Merrimack County*
B.S., University of New Hampshire, 1927. (1945-)

Tirrell, Loring V., *Professor of Animal Husbandry*
B.S., Massachusetts Agricultural College, 1920; M.S., Massachusetts State College, 1941. (1921-25, 1930-)

Towle, Carroll S., *Professor of English*
A.B., Bowdoin College, 1922; Ph.D., Yale University, 1933. (1931-)

Travis, Dorothy F., *Instructor in Zoology*
B.S., George Washington University, 1945; A.M., Radcliffe College, 1950; Ph.D., *ibid.*, 1951. (1953-)

Tuckerman, Charles S., *Instructor in Languages*
A.B., Harvard College, 1948; A.M., Harvard University, 1949. (1953-)

Turney, Mildred I., *Assistant Professor of Home Economics*
B.S., University of Connecticut, 1939; M.Ed., Pennsylvania State College, 1948. (1953-)

TYRRELL, DORIS E., *Associate Professor of Secretarial Studies*
B.S., University of Minnesota, 1926; M.A., *ibid.*, 1932. (1938-)

UNDERWOOD, RUSSELL E., *Extension Assistant Economist in Marketing*
B.S., Pennsylvania State College, 1918. (1948-)

VALENTINE, RUSSELL L., *Assistant Professor of Mechanical Engineering*
Certificate in Machine Design, Wentworth Institute, 1942; B.S., Michigan State College, 1951; M.S.M.E., Purdue University, 1953. (1953-)

WADLEIGH, CLARENCE B., *State Club Leader, Cooperative Extension Service*
B.S., New Hampshire College, 1918. (1918-19, 1920-)

WALKER, RICHARD C., *Club Agent in Strafford County*
B.S. in Agric., University of Vermont, 1950. (1953-)

†WALLACE, OLIVER P., *Assistant Professor of Forestry*
B.S., University of New Hampshire, 1937; B.S.F., University of Michigan, 1938; M.F., *ibid.*, 1947. (1953-)

WALSH, JOHN S., *Professor of Languages*
A.B., Harvard University, 1915; M.A., Boston University, 1928. (1922-)

WARREN, RICHARD, *Extension Professor of Poultry Husbandry*
B.S., Cornell University, 1934; M.S., *ibid.*, 1935. (1937-)

WATSON, LORNA B., *Instructor in The Arts*
Certificate, School for American Craftsmen, 1948. (1952-)

WEBBER, LAURANCE E., *Research Associate Professor and Assistant Director, Engineering Experiment Station*
B.S., University of New Hampshire, 1934; M.E., *ibid.*, 1940; M.S. in M.E., *ibid.*, 1946. (1937-)

WEBSTER, ROBERT G., *Associate Professor of English*
B.A., University of New Hampshire, 1926; M.A., *ibid.*, 1930. (1927-)

WEEKS, SHIRLEY J., *Home Demonstration Agent in Strafford County*
B.S., State Teachers College, Framingham, Massachusetts, 1939; M.S., Cornell University, 1944. (1945-)

WEINER, PAUL, *Instructor in Economics*
B.A., Northeastern University, 1951; M.A., Clark University, 1953. (1953-)

WELCH, ALBERT G., *Research Associate Professor and Project Coordinator, Engineering Experiment Station*
B.S., University of New Hampshire, 1936; M.S., *ibid.*, 1941. (1937-)

WESTON, RUTH C., *Associate State Club Leader*
B.A., New Hampshire College, 1921; M.Ed., University of Maryland, 1953. (1929-)

WHEELER, CHARLES M., JR., *Assistant Professor of Chemistry*
B.S., West Virginia University, 1947; M.S., *ibid.*, 1949; Ph.D., *ibid.*, 1951. (1950-)

WHIPPEN, NORMAN F., *Extension Assistant Marketing Specialist and County Agent-at-Large*
B.S., New Hampshire College, 1918. (1922-23, 1928-45, 1948-)

WHITCHER, HARRIET S. N., *Assistant Club Agent in Strafford County*
B.S., Cornell University, 1952. (1953-)

WINN, ALDEN L., *Associate Professor of Electrical Engineering*
B.S. in E.E., University of New Hampshire, 1937; S.M. in E.E., Massachusetts Institute of Technology, 1948. (1948-)

Wolf, Marjorie A., *Assistant Reference Librarian*
A.B., Ohio Wesleyan University, 1950; M.S. in L.S., Western Reserve University, 1951. (1951-)

Wolfe, Leonard P., Jr., *Club Agent in Coos County*
B.S., University of New Hampshire, 1948; M.S., *ibid.*, 1950. (1952-)

Woodruff, Ruth J., *Associate Professor of Economics*
A.B., Bryn Mawr, 1919; A.M., *ibid.*, 1920; Ph.D., Radcliffe, 1931. (1931-)

Woods, Frank R., Jr., *Assistant Professor of Physics*
A.B., New York University, 1941; M.S., *ibid.*, 1946. (1948-)

Wooster, Caroline S., *Associate Professor of Physical Education for Women*
Sargent School for Physical Education, 1926; B.S., University of New Hampshire, 1943. (1946-)

Wright, Wilbur H., *Assistant Professor of Physics*
A.B., Oberlin College, 1942; Ph.D., Rutgers, 1952. (1952-)

Yale, William, *Professor of History*
Ph.B., Sheffield Scientific School, Yale University, 1910; M.A., University of New Hampshire, 1928. (1928-)

†Yeager, Albert F., *Professor of Horticulture*
B.S., Kansas State College, 1912; M.S., Oregon Agricultural College, 1916; Ph.D., Iowa State College, 1936. (1939-)

Yingst, Harold E., *Extension Lecturer in Physics*
B.S. in Math., Lebanon Valley College, 1950; M.S. in Physics, Lehigh University, 1952. (1952-)

Zimmerman, Oswald T., *Professor of Chemical Engineering*
B.S.E. (Ch.E.), University of Michigan, 1929; M.S.E., *ibid.*, 1931; Ph.D., *ibid.*, 1934. (1938-)

Administrative Assistants

Guy W. Angell, *Farm Superintendent*
Dayton M. Henson, B.S., *Manager, University Bookstore*
Evelyn M. Hodges, B.A., *Assistant Manager, University Dining Hall*
Reginald W. King, *Manager, Printing Service*
Russell C. Smith, B.A., *Purchasing Assistant*
Allison Q. Sanborn, B.A., *Director of the Student Union*
Alice W. Stone, *Assistant Manager, University Dining Hall*
Elizabeth K. Stover, *Cashier, Business Office*
Chester R. Titus, B.A., *Manager, University Housing*

Theresa R. Batchelder, *Mail Clerk*
Gladys H. Blaisdell, *Assistant to the Treasurer*
Maisie C. Burpee, *Secretary to the Dean, College of Agriculture, and to the Director, Agricultural Experiment Station*
Lillian F. Curtis, *Personnel Assistant, President's Office*
Mildred M. Flanders, *Secretary to the Dean, College of Technology*
Cora French, *Secretary to the Director, Cooperative Extension Service*
Dorothy H. Stevens, *Secretary to the President*
Dorothy S. Hanson, *Secretary to the Dean, College of Liberal Arts*
Georgia A. Kougias, *Secretary to the Dean, Graduate School, and to the Director, Summer Session*
Juanita N. MacLean, *Assistant in University Extension*
Eloise A. MacRae, *Secretary to the Associate Deans of Students*
Gladys E. Pease, *Secretary, Office of the Dean of Students*
Bessie G. Sanborn, *Seed Analyst*
Virginia B. Wood, *Secretary to the Treasurer*

House Directors

Inez Adams, Hetzel Hall
Lulia T. Andrews, Scott Hall
Frances V. Chesley, Schofield Hall
Barbara F. Pettengill, Fairchild Hall
Louise M. Cobb, House Director Emeritus
Arline B. Dame, House Director Emeritus
Esther M. Dunning, Congreve Hall
Bertha C. Chellis, Hunter Hall
Edith R. Edwards, Engelhardt Hall
Blanche M. Foulkrod, Sawyer Hall
Minna B. Hyde, Alexander Hall
Edna A. McLellan, Congreve Hall
Marcia N. Sanders, House Director Emeritus
Grace C. Severance, Smith Hall
Margaret D. Wallace, Gibbs Hall

Residence Hall Counsellors, East and West Halls

Richard Gagne
Albert R. Hood

University Fees and Expenses

The following paragraphs summarize some of the pertinent information about fees and expenses. Complete information may be found in the *General Information 1954-55* issue of the University Bulletin.

Tuition and Fees. Tuition and fees for each semester are payable in advance.

The charge for tuition and fees is $250 per year for residents of New Hampshire and $500 for non-residents. Tuition and fees are itemized as follows: Tuition — $125 for residents of New Hampshire and $375 for non-residents. Fees — registration, $10; laboratory and library, $60; health and infirmary, $15; recreational facilities, $25; general University fee (incidentals), $15. Refundable deposits may be required to cover loss or breakage in certain departments. A charge will be made for individual lessons in music, as noted in the description of Applied Music courses. A charge will be made for riding lessons, as noted in the section on Physical Education for Women.

Any student who registers for 8 credits or more per semester shall pay the full tuition. Any student, regardless of state of residence, registering for fewer than 8 credits shall pay $10 per credit hour.

Changes in Rates. The University reserves the right to adjust charges for such items as tuition, board, and room rent from time to time. Such changes will be held to a minimum and will be announced as far in advance as feasible.

Deposits. A deposit of $15 is required of each student to whom military equipment is issued. Every student participating in the program of Physical Education and Athletics for Men and Physical Education for Women is required to deposit $1 for a locker and towel service, of which 25 cents a semester is for towel service.

Student Activity Tax. This tax, which was $9.10 in 1953-54, must be paid by each undergraduate at the time of registration.

Rooms. *Students living in University dormitories are required to sign room contracts covering the college year.*

A five-dollar ($5.00) room deposit must accompany each application for a room. This deposit will be forfeited if the room accepted is not occupied by the applicant. The deposit is held as a guarantee against breakage.

Room rent is payable in advance. For the Fall Semester room rent must be paid not later than August 15, and for other semesters during the registration periods. Reserved rooms will be held only until August 15 unless the Fall Semester's rent is paid before that date.

Rooms which are paid for and are not occupied one day after registration may be declared vacant and the room rent returned, unless the individual who holds the reservation makes a written request to the Manager, University Housing, to hold the room until a later date. The advance payment for the room will not be returned to those who make this special request. No room will be reserved for more than 10 days after the registration date. Early application is necessary in order to secure a choice of rooms. Rooms in private homes may be secured for slightly higher prices than for those in University dormitories.

Undergraduate women students under 23 years of age are required to room in one of the women's dormitories or a sorority house, unless they are working for a room in a private home or are living with their family.

The College of Agriculture

HAROLD C. GRINNELL, *Dean*
M. C. RICHARDS, *Associate Dean*

DEPARTMENTS

AGRICULTURAL AND BIOLOGICAL CHEMISTRY
AGRICULTURAL ECONOMICS
AGRICULTURAL ENGINEERING
AGRONOMY
ANIMAL HUSBANDRY
BOTANY
DAIRY HUSBANDRY
ENTOMOLOGY
FORESTRY
HOME ECONOMICS
HORTICULTURE
POULTRY HUSBANDRY

GENERAL INFORMATION

The objective of the Four-Year Curriculum of this College is to give a broad general education and thorough training in the basic sciences as well as to develop specific technical knowledge relating to the various phases of agriculture, forestry, and home economics. To this end several subjects in the College of Liberal Arts and Technology have been added to those provided by the College of Agriculture. The lecture and recitation work of the classroom is supplemented by practical exercises in the laboratories and about the farm. Seminars and discussion courses are provided for advanced students.

Some of the graduates of the Four-Year Curriculum return to the farm for the purpose of putting into practice the knowledge and training gained in their college courses, and have become successful and prosperous citizens of their communities; others accept salaried positions as superintendents or foremen on large dairy, fruit, stock, or poultry farms; still others take positions as teachers of science and agriculture in our secondary schools, or as assistants in agricultural colleges, experiment stations, or extension services; and, finally, an increasingly large number continue in specialized work, here or elsewhere, as candidates for graduate degrees.

The College of Agriculture offers the following degrees, depending on the student's field of specialization: Bachelor of Science in Agriculture, Bachelor of Science in Agricultural Engineering, Bachelor of Science in Forestry, and Bachelor of Science in Home Economics.

When a student enters the college of Agriculture as a candidate for the Bachelor of Science degree he selects his major field of study and is placed under the guidance of the Executive Advisory Committee which approves his program of study. A staff member in his major field is also assigned for consultation at any time during the Freshman year.

At the time of registration for the Sophomore year the student will be assigned to an advisor in his major field who then will be responsible for approving his program of study. Should a student elect to change his major field of study a new advisor will be assigned.

The major curriculums from which the Agricultural student may make his final choice follow. The College of Agriculture will be pleased to arrange courses of study for pre-theological, two-year pre-veterinary, and other students who desire a specialized program of study.

COLLEGE OF AGRICULTURE

General Agriculture
Agricultural and Biological Chemistry
Agricultural Economics
Agricultural Engineering
Agronomy
Animal Husbandry
Botany
Dairy Husbandry
Entomology
Forestry, including
  General Forestry
  Wildlife Management
Home Economics, including
  Clothing and Textiles
  Food, Nutrition, and Institutional Administration
  General Home Economics
  Teacher Preparation
Horticulture
Mechanized Agriculture
Poultry Husbandry
Pre-Veterinary
Teacher Preparation in Agriculture

BACHELOR OF SCIENCE IN AGRICULTURE

GENERAL REQUIREMENTS

In order to qualify for a degree each candidate must complete 136 semester credits, including the courses prescribed by his adviser or advisory committee, in one of the major Four-Year Curriculums. He must achieve a grade point average of at least 1.8.

A student graduating from any of the Four-Year Curriculums may be required by his major department to have sufficient practical experience to enable the department to recommend the student for a position.

No student may graduate from the College of Agriculture without a specific recommendation from his major department.

SPECIFIC REQUIREMENTS

During the Freshman year nearly all students who are candidates for the Bachelor of Science degree in Agriculture pursue the same general outline of fundamental course work as listed below:

Freshman Year *All Curriculums*	*First Semester Credits*	*Second Semester Credits*
R.O.T.C.	1½	1½
Physical Education 31, 32	½	½
Agriculture 1	1	
Botany 1	4	
Chemistry 1, 2, or 3, 4 (General)	4	4
Elective		3
English 1, 2	3	3
Mathematics (2), (13)*	3	3
Zoology 48		3
	17	18

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*Elective in certain departments.

Sophomore Year *All Curriculums*	*First Semester Credits*	*Second Semester Credits*
R.O.T.C.	1½	1½

ADDITIONAL MINIMUM REQUIREMENTS

In order to complete the requirements for the Bachelor of Science degree in Agriculture or Forestry, a student must obtain, in addition to the required Freshman work, additional credits in each of several areas as noted below.

These minimum requirements covering the four years of study follow:

Biological Sciences (Bact., Bot., Zool., Ent. 2)	3
Chemistry (Ag. Chem., or Chem.)	5
Economics 1	3
Econ., Ag. Econ., or For. Econ. 44, for For. majors	3
English	5
Physics	4
Social Sciences (Govt., Hist., Psych., Soc., Ed. 41, 42, 52)	6
Total	29

CURRICULUMS

General Agriculture

This Curriculum is offered for the student who wishes to secure a broad, general training in many important branches of agriculture without specializing unduly in any particular department. A wider choice of subject matter is advised here than in the more specialized curriculums.

Students who expect to engage in farming will find this so-called General Curriculum, with its wide range of fundamental courses, a most profitable one. This Curriculum also prepares for Agricultural Extension work like that of a county agent, a boys' and girls' club leader, or a marketing or farm management investigator. For those expecting to specialize later in graduate work, the broad foundation of fundamental subject matter made possible by this Curriculum should provide a desirable background.

Agricultural and Biological Chemistry

Students majoring in this Curriculum receive training in the various branches of General Chemistry and in their application to the growth and development of plants and animals. The methods used in the chemical analysis of plants and agricultural products and in the study of animal nutrition and metabolism are given special attention. The Curriculum is designed to provide a thorough foundation for those expecting to prepare themselves for teaching and research in agricultural colleges and experiment stations, or for technical positions in industry related to agriculture. A Freshman who wishes to major in this Department should take Chemistry 3-4 and also Mathematics 11, 13, 14, and 16 if his high-school preparation is adequate.

As this is a professional and specialized field, entrance to it at the beginning of the Sophomore year, and continuance in it, are conditioned by a satisfactory record. An early conference with the Chairman of the Department is imperative.

Agricultural Economics

The Curriculum in Agricultural Economics is designed to meet the needs of two groups of students: (1) those who are interested in becoming farmers, farm managers, farm credit representatives, county agricultural agents, managers of cooperatives, or representatives of firms marketing farm products or selling supplies and services to farmers; and (2) those who wish to prepare for more specialized positions in agricultural colleges, experiment stations, government agencies, or research departments of industrial firms servicing agriculture.

The student in Agricultural Economics, in addition to receiving a liberal university education, is trained in the science of economics and in such specialized fields as farm management, farm finance and credit, farm planning, economics of processing and distributing farm products, analysis of market prices, and economics of consumption.

The work offered is complementary with that offered by other departments and is in part designed to help major students in other fields gain knowledge about the economics of agriculture and methods of making decisions and economic analysis in food production and marketing.

All students majoring in this field are expected to gain a good background in practical agriculture from courses in dairy, poultry, and other fields. Such courses are selected by the student on the basis of his interest and personal objectives and he will be advised in the selection of special courses.

Agricultural Engineering

Candidates for the degree of Bachelor of Science in Agricultural Engineering will refer to the Agricultural Engineering Curriculum on page 48. Candidates for the Bachelor of Science degree with a major in Mechanized Agriculture will refer to Mechanized Agriculture on page 45.

Agronomy

Persons trained in Agronomy are qualified to take Federal Civil Service examinations to enter the Field Crops or Soil and Water Conservation Research branches of the United States Department of Agriculture. Positions in research and teaching are also available to men with advanced training in Agronomy. The Agricultural Extension Service, as well as seed, feed, and fertilizer companies, often employ graduates who have majored in Agronomy.

Courses offered in Agronomy provide a chance for the student to specialize in Soil Science or Crop Science. Students majoring in these fields must complete a minimum of 21 credits in Agronomy. Those who specialize in Soil Science may find employment in many fields, such as soil conservation, soil classification and mapping, soil physics, soil chemistry, soil microbiology, and soil fertility. Those who specialize in Crop Science will be qualified for employment in crop production and management, plant breeding, and in related fields.

Well-equipped laboratories and greenhouse facilities are provided for students; also, opportunities are available to study nearby field experiments.

Animal Husbandry

This Curriculum is offered to students who wish specialized training in the intelligent and practical selection, breeding, feeding, and management of horses, sheep, swine, and beef and dual-purpose cattle.

It provides basic knowledge and training for managing livestock farms, and prepares students for production and sales work with feed concerns and packing plants. Many graduates enter the field of Agricultural Extension work as specialists and as county agricultural agents. The subject matter is basic in preparation for graduate work in Animal Husbandry.

A course in meat and meat products is included. Some cultural subjects are required. Students are permitted to elect subjects in line with their capabilities and inclinations.

The Department maintains purebred herds of Milking Shorthorn and Hereford cattle; Yorkshire swine; flocks of Dorset and Shropshire sheep; Belgian and Morgan stallions, and Percheron and Morgan mares.

Botany

Students interested in getting a broad background in the plant sciences should consider majoring in Botany. The principal fields of concentration in Botany are: (1) Pathology — the study of plant diseases, their causes and control; (2) Physiology — the study of plant functioning with such practical applications as plant nutrition and other requirements for plant growth; (3) Taxonomy — plant classification and plant identification; (4) Ecology — which concerns the relationship of the plant to its environment; (5) Morphology and Anatomy — the study of the antomy, development, and cellular organization of plants, including histological and cytological techniques and chromosome studies; and (6) Preparation for botanical technicians.

The undergraduate courses to be taken in all these fields are nearly the same until the Junior and Senior years. Some specialization should then be made. The student who graduates in Botany may take graduate work in Botany or in the related fields of Horticulture, Forestry, and Agronomy which require an extensive background in Botany, Assistantships, research positions, and full-time teaching jobs are more available at present than in previous years. Opportunities for able botanists also occur in government work. Technicians may obtain positions with a B.A. or B.S. degree.

Dairy Husbandry

Students majoring in Dairy Husbandry are offered specialized courses in (1) Dairy Production and (2) Dairy Manufacturing. Training in Dairy Production prepares students for the operation of modern dairy farms; for positions in the Agricultural Extension Service and breed association work; and for field, sales, and technical positions in the dairy farm equipment and feed industry and for commercial dairy concerns.

Training in Dairy Manufacturing is particularly well suited to prepare students for executive and administrative positions in creamery and other dairy establishments. It also prepares for plant and laboratory positions in milk and milk-processing plants; and for inspectors of dairy products and dairy establishments in federal, state, and municipal service.

Both of these fields offer a broad fundamental training for those intending to pursue graduate study in preparation for more specialized work in dairy and related industries.

The University dairy herd, together with the daily operations in the market milk pasteurizing and ice cream units at the Dairy Building, contribute to the practical training of students in any one of several lines of the dairy industry.

The Dairy Husbandry Laboratories, located in the Dairy Building and in the Dairy Barn, are well equipped for instructional purposes. The equipment includes power churn, power separator, pasteurizers, coolers, ice cream freezers, bottler, refrigeration units, homogenizer, and a soaker-type bottle washer. The milk testing and bacteriological laboratories are equipped for chemical and bacteriological analyses of dairy products.

Entomology

The Department of Entomology offers various courses for students who wish to specialize in the study of insects, insect life, and in the control of insects. Although the field of employment is limited, there are definite opportunities available to those who are qualified. The majority of these opportunities are in the public service, although commercial and industrial firms also employ college graduates who have specialized in this field.

Students who desire a broad fundamental training in Entomology and related fields will follow the program outlined as General Entomology. Those who wish to specialize in chemical control of insects, and who plan to take graduate work leading to a professional degree in that field, will follow a program to be outlined for Insect Toxicology. These students will be expected to take considerable Mathematics and Chemistry.

Students planning a career in Entomology are urged to consult with their adviser in regard to the selection of electives best suited to their needs.

Horticulture

Conditions of climate, soil, and market combine to make New Hampshire a state with great horticultural possibilities. Accordingly, the Department of Horticulture, with its excellent facilities and staff, offers instruction in three major fields: Pomology (fruit growing), Olericulture (vegetable growing), and Ornamental Horticulture with particular emphasis on Floriculture, Propagation, and Greenhouse Management.

Students who graduate with a major in Horticulture will have received the liberal training expected of a university graduate, a thorough preparation in the fundamental sciences underlying plant production, adequate training in General Horticulture, and, finally, specialization in the field chosen. The courses are designed to acquaint the student with the problems of the improvement, production, and marketing of fruits, vegetables, plants, or flowers. The training is such that superior students can pass the Federal Civil Service Examinations required for entrance into positions with the United States Department of Agriculture or find positions in research, teaching, or state agricultural extension services. It is usually expected that students will take graduate work if they intend to enter the professional field. University of New Hampshire graduates with a good scholastic record have had little difficulty in securing fellowships or scholarships in other colleges and universities.

Major students in the Department must elect a minimum of 11 semester credits in Advanced Horticulture and related courses, in addition to Hort. 2, 13, 91, 92, and 94, required of all majors. A special effort is made to see that outside work during the college year and work done during the vacation periods will provide sufficient practical experience before a student graduates, so that he has more than a theoretical knowledge of his profession. The extensive University orchards, gardens, and greenhouses are used as laboratories.

Mechanized Agriculture

The Department of Agricultural Engineering offers a program for students who are interested in the production of crops and livestock, county agricultural agent work, soil conservation work, and in sales work dealing directly with farm people. Courses offered by the Department for students in this Curriculum approach soil and water control, farm power and machinery, farm buildings, and electrical equipment from the point of view of the user and consumer rather than that of the designer.

Poultry Husbandry

The Curriculum in Poultry Husbandry has been designed to offer students fundamental and special training in the practical and professional fields of Poultry.

The program of study prepares students for various lines of work such as: production, sales, and service with feed and equipment manufacturing concerns; marketing organizations handling poultry and eggs; commercial hatcheries; poultry-farm managers, as well as for the operation of their own farms. By supplementing his undergraduate work with one or more years of graduate study, the superior student will find opportunities in the professional fields of teaching, agricultural extension, and research.

Major students are expected to take all courses offered in the Department. In addition, selected courses in other departments of the College are required in support of, and as a supplement to, the instruction given in the Department. However, the student elects these courses under guidance, and considerable latitude is offered. Special attention is given to the interests and ability of each student.

The Department works closely with the poultry industry in the State which ranks high among those in the country. In this connection, frequent and full discussion is given in the classroom to broad problems of the industry.

A brief but comprehensive period of practical work is offered for those who lack sufficient experience in the actual care and production of chicks and laying birds. All the facilities of the University Plant are available for such students. This plant is stocked with both chickens and turkeys, and has modern equipment for carrying on its work.

Pre-Veterinary

Students who contemplate veterinary medicine as a career should elect the Pre-Veterinary Curriculum. Successful completion of this Curriculum will meet the scholastic requirements for admission to an approved veterinary college. However, all veterinary colleges give first preference for admission to applicants from their respective states. The current number of applications for admission is tremendous. The few out-of-state students who will be admitted will necessarily have shown outstanding scholastic ability.

Although two years of Pre-Veterinary training will meet the requirements of most veterinary colleges, it is desirable for a person to spend four years in Pre-Veterinary work and complete the requirements for the Bachelor's Degree.

Teacher Preparation

Under the provision of the Smith-Hughes Act, the University of New Hampshire has been designated as the institution in this State for the preparation of Teachers of Agriculture. Vocational Agriculture offers a fertile field for young men who desire to follow the profession of teaching. The work is varied and interesting with opportunities for wide community contacts through the all-day, young farmer and adult farmer programs.

Agricultural teachers are encouraged to enter upon a program of graduate study as a means of professional growth. Successful completion of such study should result in greater opportunities for advancement in the field of Agricultural Education.

Due to the nature of the duties performed by the teacher of Agriculture, it is essential for a student to acquire a good foundation in all the predominating agricultural enterprises of the State. His course of study, therefore, will follow a broad general program rather than a specialization in any one particular field. Furthermore, he must meet the State requirements for certification which include 21 semester hours of professional education, and 8 credits of Agricultural Engineering.

SUGGESTED PROGRAMS

Except for minor variations, the required Freshman program is applicable to all agricultural students who are candidates for the Bachelor of Science degree. Military Science and Physical Education, which are general curriculum requirements, should be completed by the end of the Sophomore and Freshman years, respectively. "Additional Minimum Requirements" may be satisfied at any time prior to graduation but should be kept in mind when planning a schedule of courses for each semester during the Sophomore, Junior, and Senior Years. Beyond the Freshman program, the General Curriculum Requirements of the University, and the Additional Minimum Requirements of the Agricultural College, a student will select the remainder of his program in consultation with the supervisor of his curriculum.

The following curriculums *suggest* a plan of study applicable to most students but are not intended as a list of required courses. It is assumed that the program will vary according to the needs of the individual student. It should be remembered that a student must complete an average of 17 credits per semester in order to accumulate a total of 136 credits in four academic years.

GENERAL AGRICULTURE

Sophomore Year	*First Semester Credits*	*Second Semester Credits*
Agron. 11, 14, *Soils, Fertilizers and Soil Fertility*	4	3
Agron. 21, *Crop Production*	3	
Ag. Chem. 1, *Organic and Biological*	5	
D. H. 5, *Fundamentals of Dairying*	3	
Phys. 9, *Elementary Physics*	4	
P. H. 2, *Farm Poultry*		3

Junior Year		
A. H. 11, 2, *Judging, Types and Market Classes*	1	3
A. H. 13, *Feeds and Feeding*	3	
D. H. 33, 34, *Products Judging, Cattle Judging*	1	1
Econ. 1, *Principles*	3	
Ent. 41, *Insects of Orchard and Garden*	3	
Hort. 14, *Vegetable Gardening*		3
Zool. 61, *Genetics*	3	

Senior Year		
Ag. Econ. 14, *Farm Management*		4
Agron. 28, *Forage and Pasture Crops*		3
D. H. 64, *Milk Production*		3
Engl. 35, (23), *Public Speaking, Writing Technical Reports*	3	2
Hort. 53, *Orchard Fruits*	3	

AGRICULTURAL AND BIOLOGICAL CHEMISTRY

The following program of study assumes the completion in the Freshman year of mathematics sufficient to serve as the prerequisite to calculus. Otherwise, additional mathematics would need to be included. Chemistry 3-4 is preferred to Chemistry 1-2 for Freshmen.

Sophomore Year	*First Semester Credits*	*Second Semester Credits*
Agron. 11, 14, *Soils, Fertilizers and Soil Fertility*	4	3
Bact. 1, *General Bacteriology*	4	
Bact. 2, *Food and Sanitary Bacteriology*		4
Chem. 17, 26, *Introductory Quantitative and Qualitative Analysis*	4	4
Math. 17, 18, *Calculus*	3	3
Junior Year		
Chem. 51-52, *Organic Chemistry*	5	5
Econ. 1-2, *Principles*	3	3
Lang. 1-2, *French or German*	3	3
Phys. 1-2, *Introductory Physics*	4	4
Senior Year		
Ag. Chem. 51-52, *Physiological Chemistry*	5	5
Ag. Chem. 53-54, *Agricultural Analysis*	3	4
Engl. 35, *Public Speaking*	3	
Engl. (23), *Writing Technical Reports*		2

AGRICULTURAL ECONOMICS

This Curriculum will be arranged to fit the needs of the individual student. The selection of additional courses to establish a background in modern practical agriculture is recommended.

Sophomore Year	*First Semester Credits*	*Second Semester Credits*
Ag. Chem. 1, *Organic and Biological Chemistry*	5	
Ag. Econ. 12, *Economics of the Agricultural Industry*		3
Agron. 11, *Soils*	4	
Agron. 21, *Crop Production*	3	
D. H. 5, *Fundamentals of Dairying*	3	
Econ. 1-2, *Principles of Economics*	3	3
Phys. (9), *Elementary Physics*		4
P. H. 2, *Farm Poultry*		3

JUNIOR YEAR

Ag. Econ. 14, *Farm Management*		4
Ag. Econ. 55, *Agricultural Marketing*	3	
A. H. 13, *Feeds and Feeding*	3	
Econ. (31), *Economic and Business Statistics*		3
Engl. 35, *Public Speaking*	3	
Govt. 1, *American Government*	3	
Hort. 14, *Elementary Vegetable Gardening*		3

SENIOR YEAR

Ag. Econ. 51, *Cooperative Business*	3	
Ag. Econ. 60, *Agricultural Policy*		3
Econ. 51, *Labor Economics*	3	
Engl. (23), *Writing Technical Reports*		2

AGRONOMY

The Agronomy program will vary according to whether the student wishes to specialize in Soil Science or Crop Science, and whether he plans to do graduate work. The courses listed below should be used as a guide for the student in working out a program in consultation with his faculty advisor.

SOPHOMORE YEAR	*First Semester Credits*	*Second Semester Credits*
Ag. Chem. 1, *Organic and Biological Chemistry*	5	
Agron. 11, *Soils*	4	
Agron. 14, *Fertilizers and Soil Fertility*		3
Agron. 21, *Crop Production*	3	
Agron. 24 or 26, *Cereals and Other Grain Crops* or *Potatoes and Other Cash Crops*		3
Engl. (35), *Public Speaking*		3
Phys. 1, *Introductory*	4	
Phys. 2, *Introductory* or Bot. 2, *General*		4
Social Science		3

JUNIOR YEAR

Agron. 57, *Soil Physics*	3	
Agron. 26, *Potatoes and Other Cash Crops*		3
Agron. 28, *Forage and Pasture Crops*		3
Agron. 58, *Soil Classification and Mapping*		3
Bact. 1, *General Bacteriology*	4	
Bact. 6, *Soil Bact.* or Bot. 56, *Plant Phys.*		3 or 4
Econ. 1, *Principles*	3	
Geology 1, *Principles*, or Ent. 41, *Garden Insects*	4	
Geology 2, *Principles*, or Bot. 42, *Ecology*		4 or 3
Zool. 61, *Genetics*	3	

Senior Year

Ag. Econ. 14, *Farm Management*		4
Agron. 51, *Pasture-Hay Land and Turf Management*	3	
Agron. 59, *Soil Chemistry*	3	
Agron. 60, *Soil Conservation*		3
Agron. 62, *Plant Breeding of Field Crops*		3
Agron. 71, 72, *Agronomy Seminar*	1	1
A. H. 13, *Feeds and Feeding*	3	
Bot. 51, *Plant Pathology*	3	
Engl. 23, *Writing Technical Reports*	2	
Social Science	3	
Elective		5

Other recommended electives are: Ag. Chem. 2, *Plant Chemistry*; Agron. 25, *Seed Testing*; Botany 53, *Plant Anatomy and Cytology*; C. E. 7, *Surveying*; D. H. 64, *Milk Production*; For. 1, *Management of Farm Woodlands*; For. 57, *Aerial Photogrammetry in Forestry*; Geol. 31, *Physiography*; Geol. 32, *Glacial Geology*; Hort. 53, *Pomology: Orchard Fruits*; Hort. 54, *Pomology: Small Fruit Culture.*

ANIMAL HUSBANDRY

Sophomore Year	*First Semester Credits*	*Second Semester Credits*
Ag. Chem. 1, *Organic and Biological Chemistry*	5	
Ag. Chem. 4, *Animal Nutrition*		3
Agron. 11, *Soils*	4	
Agron. 21, *Crop Production*	3	
D. H. 33, 36, *Dairy Cattle Judging*	1	1
Phys. 9, *Elementary Physics*	4	

Junior Year

A. H. 11, 14, *Livestock Judging*	1	1
A. H. 13, *Feeds and Feeding*	3	
A. H. 15, 16, *Systematic Anatomy, Animal Diseases*	3	3
A. H. 18, *Meat and Its Products; Livestock Markets*		3
Bact. 1, *General*	4	
Econ. 1-2, *Principles*	3	3
Engl. (35), *Public Speaking*		3
Zool. 61, *Genetics*	3	

Senior Year

Ag. Econ. 14, *Farm Management*		4
A. H. 19, 20, *Horses and Beef Cattle, Sheep and Swine*	3	3
A. H. 21, *Light Horse Husbandry*	2	
A. H. 41, 52, *Animal Breeding, Seminar*	3	1–3
D. H. 23, *Dairy Cattle*	3	
D. H. 64, *Milk Production*		3
D. H. 65, *Market Milk*	3	

BOTANY

The Botany Curriculum will vary according to the special interest of the student, whether Psysiology, Pathology, Taxonomy, Morphology, Anatomy, or Ecology.

Sophomore Year	First Semester Credits	Second Semester Credits
Ag. Chem. 1, 2, *Organic, Plant Chemistry*	5	3
Bact. 1, *General*	4	
Bot. 6, *Systematic*		3
Bot. 12, *Morphology of the Vascular Plants*		4
Econ. 1-2, *Principles*	3	3
Ger. 1, 2, *Elementary*	3	3
Zool. 61, *Genetics*	3	
Junior Year		
Agron. 11, *Soils*	4	
Bot. 51, 52, *Plant Pathology, Plant Disease Control*	3	3
Bot. 53, 56, *Plant Anatomy and Cytology, Plant Physiology*	3	4
Engl. (35), *Public Speaking*		3
Phys. 1-2, *Introductory*	4	4
Senior Year		
Bot. 55, *Advanced Systematic*	4	
Bot. 57, 58, *Problems*	2–6	2–6
Engl. (23), *Writing Technical Reports*		2

Recommended electives for the Botany Curriculum include: Hort. 2, *Plant Propagation;* Hort 91, *Plant Breeding;* For. 25-26, *Tree and Wood Identification.*

DAIRY HUSBANDRY

Sophomore Year	First Semester Credits	Second Semester Credits
Ag. Chem. 1, 4, *Organic, Animal Nutrition*	5	3
Agron. 11, *Soils*	4	
Agron. 21, *Crop Production*	3	
A. H. 11, 2, *Livestock Judging, Types and Breeds*	1	3
D. H. 33, 34, *Dairy Products Judging, Dairy Cattle Judging*	1	1
Phys. (9), *Elementary Physics*		4
Junior Year		
Agron. 14, *Fertilizers and Soil Fertility*		3
A. H. 13, *Feeds and Feeding*	3	
A. H. 15, 16, *Systematic Anatomy, Animal Diseases*	3	3
Bact. 1, *General*	4	
D. H. 27, 30, *Butter and Cheese, Dairy Bacteriology*	3	4
D. H. 36, *Advanced Judging*		1
Econ. 1, *Principles*	3	
Engl. (35), *Public Speaking*		3
Zool. 61, *Genetics*	3	

SENIOR YEAR

Ag. Econ 14, *Farm Management*		4
Ag. Econ. 52, *Cooperative Business*		3
Agron. 28, *Forage and Pasture Crops*		3
A. H. 51, *Animal Breeding*	3	
D. H. 23, 62, *Dairy Cattle, Advanced Dairy Science*	3	2
D. H. 60, *Seminar*		2
D. H. 65, 64, *Market Milk, Milk Production*	3	3
D. H. 66, *Ice Cream*		3
Engl. 23, *Writing Technical Reports*	2	

For students who are interested in Dairy Manufacturing, the program of study will permit substitute courses in Business Administration for many of the production courses listed above.

ENTOMOLOGY

SOPHOMORE YEAR

	First Semester Credits	*Second Semester Credits*
Ag. Chem. 1, 2, *Organic, Plant Chemistry*	5	3
Econ. 1-2, *Principles*	3	3
Ent. 41, *Insects of Orchard and Garden*	3	
Phys. (9), *Elementary Physics*		4
Zool. 7-8, *General*	4	4

JUNIOR YEAR

Bact. 1, *General Bacteriology*	4	
Bot. 6, *Systematic*		3
Engl. (35), *Public Speaking*		3
Engl. 25-26, *Advanced Composition*	3	3
Ent. 55, 56, *Household Insects, Forest Insects*	2	2
Ent. 57-58, *Advanced*	4	4
Zool. 61, *Genetics*	3	
Zool. 56, *Invertebrate*		4

SENIOR YEAR

Bot. 51, 56, *Plant Pathology, Plant Physiology*	3	4
Engl. 23, *Writing Technical Reports*	2	
Ent. 54, *Medical*		3
Ent. 59, 60, *Advanced Economic*	3	3
Lang. 1-2, *French* or *German*	3	3

Students who are interested in Insect Toxicology will follow the same general program of study except that they will complete additional courses in Mathematics and Chemistry selected in consultation with an advisor.

HORTICULTURE

Sophomore Year	First Semester Credits	Second Semester Credits
Ag. Chem. 1, 2, *Organic, Plant*	5	3
Agron. 11, 14, *Soils, Fertilizers*	4	3
Econ. 1, *Principles*	3	
Ent. 41, *Insects of Orchard and Garden*	3	
Hort. 13, 2, *Judging, Propagation*	2	2
Junior Year		
Bact. 1 or 3, *General* or *Elements of Microbiology*	3–4	
Bot. 51, 56, *Plant Pathology, Plant Physiology*	3	4
Hort. 94, *Plant Breeding*		3
Engl. 35, *Public Speaking*	3	
Phys. 9, *Elementary Physics*	4	
Zool. 61, *Genetics*	3	
Senior Year		
Ag. Econ. 14, *Farm Management*		4
Bot. 53, *Plant Anatomy and Cytology*	3	
Engl. 23, *Writing Technical Reports*	2	
Hort. 91-92, *Seminar*	1	1

Each student will select 11 additional credits in Horticulture to round out a good horticultural foundation and in accordance with his major interests. The following are suggested as desirable electives offered by other departments: Agron. 58, *Soil Classification;* Arts 23, *Drawing and Design;* Arts 39, *Elementary Photography;* Bot. 2, *General;* Bot. 3, *Plant World;* Bot. 6, *Systematic;* Bot. 52, *Plant Disease Control;* Bus. Ad. 1, 2, *Accounting;* Engl. 22, *News Writing;* Geol. 7, *General;* Geog. 21, *Weather.*

MECHANIZED AGRICULTURE

Sophomore Year	First Semester Credits	Second Semester Credits
Ag. Chem. 1, *Organic and Biological*	5	
Ag. Eng. 17, 18, *Farm Shop*	2	2
Agron. 11, *Soils*	4	
Phys. 1-2, *Introductory Physics*	4	4
*Electives		
Junior Year		
Ag. Eng. 21, *Soil and Water Survey*	2	
Ag. Eng. 22, 23, *Farm Power, Farm Machinery*	2	2
Econ. (1), *Principles*		3
*Electives		

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*Courses listed in the Junior and Senior years may be taken earlier if the proper prerequisites are met.

SENIOR YEAR

Ag. Econ. 14, *Farm Management*		4
Ag. Eng. 24, *Farm Structures*		2
Engl. 35, *Public Speaking*	3	
Engl. 23, *Writing Technical Reports*	2	
*Electives		

In addition to the courses specified above, the student should select courses to give him a general agricultural knowledge and to satisfy the minimum requirements of the college (see Page 33). The following are suggested for that purpose: Ag. 3-4, *Agricultural Extension*; Agron. 14, *Fertilizers and Fertility;* Agron. 21, *Crop Production*; Agron. 28, *Forage and Pasture Crops;* Agron. 58, *Soil Classification*; Agron. 60, *Soil Conservation;* A. H. 2, *Types and Market Classes*; A. H. 13, *Feeds and Feeding*; Bact. 1, *General Bacteriology*; D. H. 5, *Fundamentals of Dairying*; D. H. 64, *Milk Production*; B.A. 21-22, *Commercial Law;* Ent. 41, *Insects of Orchard and Garden*; For. 1, *Management of Farm Woodlands;* Govt. 1, 2, *American Government* (and/or *Problems of*) ; Hort. 14, *Elementary Vegetable Gardening;* Hort. 53, *Orchard Fruits;* Hort. 54, *Small Fruit Culture*; M. E. 1-2, *Engineering Drawing*; P. H. 2, *Farm Poultry;* P. H. 26, *Poultry Management*; Soc. 39, *Rural Sociology;* Zool. 61, *Genetics.*

POULTRY HUSBANDRY

SOPHOMORE YEAR	*First Semester Credits*	*Second Semester Credits*
Ag. Chem. 1, 4, *Organic, Animal Nutrition*	5	3
Agron. 11, *Soils*	4	
Econ. 1, *Principles*	3	
P. H. 17, *Judging and Selection*	3	
P. H. 6, *Feeding*		3
P. H. 23, 24, *Practice*	2	2

JUNIOR YEAR

Ag. Econ. 12, *Agricultural Industry*		3
Bact. 1, *General*	4	
P. H. 29, *Breeding*	3	
P. H. 7, *Housing*	2	
P. H. 18, *Incubation and Brooding*		3
P. H. 20, *Diseases*		3
Phys. 9, *Elementary Physics*	4	
Zool. 61, *Genetics*	3	

SENIOR YEAR

Engl. 23, (35), *Writing Technical Reports, Public Speaking*	2	3
P. H. 27, 28, *Seminar*	1	1
P. H. 53, 54, *Problems*	1–3	1–3
P. H. 19, *Marketing*	3	
P. H. 26, *Management*		4
P. H. 56, *Turkey Production*		2

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*See footnote on preceding page.

PRE-VETERINARY

In the Freshman year, Pre-Veterinary majors will take Chemistry 3-4 as a prerequisite for more advanced chemistry in subsequent years. The program of study is so arranged that the student will meet the course requirements of most veterinary colleges at the end of the Sophomore year. The student should make known to his advisor the name of the veterinary college to which he wishes to be admitted.

Sophomore Year	*First Semester Credits*	*Second Semester Credits*
Chem. 45, *Organic*	5	
Phys. 1-2, *Introductory*	4	4
Soc. 1, 44, *Principles, Social Psychology*	3	3
Zool. 7-8, *General*	4	4
Junior Year		
A. H. 13, 2, *Feeds and Feeding, Types*	3	3
A. H. 11, 18, *Judging Meat Products*	1	2
Bact. 1, 2, *General, Food and Sanitary*	4	4
D. H. 64, *Milk Production*		3
Econ. 1-2, *Principles*	3	3
Engl. (35), *Public Speaking*		3
Zool. 61, *Genetics*	3	
Senior Year		
Ag. Chem. 4, *Animal Nutrition*		4
A. H. 19, 20, *Horses and Beef Cattle, Sheep and Swine*	3	3
Bact. 53, 8, *Immunology and Sirology, Pathogenic*	4	4
Engl. 25-26, *Advanced Compositions*	3	3
Engl. 23, *Writing Technical Reports*	2	
Govt. 1, 2, *American Government*	3	3

TEACHER PREPARATION IN AGRICULTURE

Sophomore Year	*First Semester Credits*	*Second Semester Credits*
Ag. Chem. 1, *Organic and Biological*	5	
Ag. Eng. 17, 18, *Farm Shop*	2	2
Agron. 11, 14, *Soils, Fertilizers and Soil Fertility*	4	3
D. H. 5, *Fundamentals of Dairying*	3	
Ed. 42, *Principles of Educational Psychology*		3
Econ. 1, *Principles*	3	
Phys. 9, *Elementary Physics*	4	
P. H. 2, *Farm Poultry*		3

JUNIOR YEAR

Ag. Econ. 52, *Cooperative Business*		3
Ed. 89, 90, *Agriculture-Education*	1	1
Ag. Eng. 23, *Farm Machinery*	2	
A. H. 13, *Feeds and Feeding*	3	
Ed. 52, *American Secondary Education*		3
Ed. 91, 92, *Agriculture-Education*	3	3
Engl. (35), *Public Speaking*		3
Ent. 41, *Insects of Orchard and Garden*	3	
Hort. 53, 14, *Orchard Fruits, Vegetable Gardening*	3	3

SENIOR YEAR

Ag. Econ. 14, *Farm Management*		4
Agron. 28, *Forage and Pasture Crops*		3
Ed. 93, *Supervised Teaching*	13	
Engl. 23, *Writing Technical Reports*	2	

Note — A student must elect at least two more credits in Ag. Eng. in addition to those listed above.

BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

The purpose of this curriculum is to train men in the application of engineering knowledge and techniques to the problems of the agricultural industry. A sound academic background in the natural sciences and mathematics and the fundamentals of engineering and agriculture precede specialization in agricultural engineering. Most agricultural engineers are employed in the fields of farm structures, farm machinery, rural electrification, and soil and water conservation. The student has an opportunity to select courses which are of interest to him and are related to these major phases of the profession.

Students who elect this course of study are expected to pepare for engineering service in rural communities; for teaching, research, and extension work in colleges, experiment stations, and government agencies; for positions related to the manufacture and sale of farm machinery and farm power equipment; for advisory and managerial posts in connection with agricultural development; for positions with farm buildings' and materials' concerns; and for work relating to the increased use of electricity in agriculture. Opportunities for employment and progressive advancement after graduation are numerous in this expanding field of engineering.

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
P. E. 31-32	½	½
R.O.T.C.	1½	1½
Ag. Eng. 15, *Agricultural Engineering Shop*	1	
Chem. 3-4, *General Chemistry*	4	4
C. E. 2, *Surveying*		2
Engl. 1-2, *Freshman English*	3	3
Math. 11, *Algebra*	3	
Math. 13, *Trigonometry*	3	
Math. 14, *Analytic Geometry*		3
Math. 16, *Calculus I*		3
M. E. 1-2, *Engineering Drawing*	2	2

Sophomore Year

R.O.T.C.	1½	1½
Engl. (35), *Public Speaking*		3
Math. 17-18, *Calculus*	3	3
M. E. 4, *Kinematics*		3
Phys. 21-22, *General Physics*	6	6
*Electives		

Junior Year

Ag. Eng. 31, *Soil and Water Engineering*	3	
Ag. Eng. 34, *Agricultural Structures*		3
Ag. Eng. 40, *Problem-Seminar*	0	0
E. E. 37-38, (or E. E. 33 and Elective)	4	4
M. E. 7-8, *Mechanics*	4	4
M. E. 23-24, *Thermodynamics*	3	3
*Electives		

Senior Year

Ag. Eng. 33, *Agricultural Machinery*	3	
Ag. Eng. 35, *Electrical Application in Agriculture*	3	
Ag. Eng. (40), *Problem-Seminar*	0	0
Engl. 23, *Writing Technical Reports*	2	
*Electives		

Note — For the degree of Bachelor of Science in Agricultural Engineering, 144 semester credits are an absolute minimum.

Summer Employment

Ten weeks of agricultural employment are required of all candidates for the degree during some Summer Session (preferably between the Sophomore and Junior years). This employment must be approved by the agricultural engineering staff and the Dean of the College. For those students having exceptional experience of this type, the requirement will be waived.

Summer Session

On approval (or recommendation) of the Agricultural Engineering staff, some students may take a summer session or an additional semester in which to complete their requirements for the degree in order to lighten their load during the other eight semesters.

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*Electives: In the selection of electives all students working for the degree of Bachelor of Science in Agricultural Engineering must select: (1) two courses of approved social science; (2) the course Economics 1 (Econ. 2 also advisable in some cases); (3) agricultural courses (other than courses in agricultural engineering), including Agr. Ec. 14 and Agron. 11, sufficient to total 13 semester credits; and (4) approved courses from the College of Technology having bearing on the individual's needs and interests.

BACHELOR OF SCIENCE IN FORESTRY

All Forestry majors must take the same basic program to qualify for the B.S. degree in Forestry. Further requirements are designed to meet the needs of two classes of students: (1) those who desire a foundation for professional or graduate work in Forestry; and (2) those who wish to fit themselves for employment in Wildlife Management. The program for each group is approximately the same during the first two years, although it is necessary to make certain decisions rather early in the course. Attendance at an eight weeks' session of Summer Camp is required during the summer following the Sophomore year for the Forestry group and following the Junior year for the Wildlife Management group.

Forestry

This includes those students who wish to secure a general training in Forestry. Some latitude is allowed in the courses which the student may elect, but his efforts are directed toward securing a broad knowledge of the profession. Those who intend to become teachers or research workers should plan to take advanced studies at some other institution, and should elect the courses necessary for admission to graduate school.

Wildlife Management

The Wildlife Management curriculum emphasizes this field while giving the student an adequate training in General Forestry. This combination is considered essential, as a large part of the country's wildlife program of the future will be handled by men who are employed primarily as foresters.

A student majoring in one of the Forestry curriculums is held for the same general, specific, and additional minimum requirements given on pages 33 and 34 for the Bachelor of Science in Agriculture degree.

FORESTRY GENERAL

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
P. E. 31-32	½	½
R.O.T.C.	1½	1½
Ag. 1, *Orientation*	1	
Bot. 1, 6, *General, Systematic*	4	3
Chem. 1, 2, *General*	3	3
Engl. 1-2, *Freshman*	3	3
For. 25, *Dendrology*	2	
Math. (2) or 11 and (13), *Algebra, Trigonometry*	3	3
Zool. 48, *Principles*		3
SOPHOMORE YEAR		
R.O.T.C.	1½	1½
Ag. Chem. 1, *Organic and Biological*	5	
Agron. 11, *Introductory Soils*	4	
C. E. (7), *Surveying*		3
Econ. 1, *Principles*	3	
Ent. 2, *Elementary*		3
For. 28, *Mensuration*		4
For. 29, 30, *Silviculture; Seeding and Planting*	3	3
Social Science. Elective		3

SUMMER SESSION

For. 42, *Forest Engineering*	5	
For. 45, *Timber Survey*	5	

JUNIOR YEAR

Bot. 51, 56, *Plant Pathology; Physiology*	3	4
Engl. (35), *Public Speaking*		3
Ent. 56, *Forest Insects*		2
For. 27. *Silvics*	3	
For. (34), *Wildlife Management*	3	
For. 43, 44, *Advanced Mensuration; Economics*	3	3
Phys. 9, *Elementary Physics*	4	
*Social Science. Elective.		3

SENIOR YEAR

Engl. (23), *Writing Technical Reports*		2
For. 31, 32. *Logging; Forest Products*	4	4
For. 33, 26, *Forest Protection; Wood Identification*	3	3
For. 39, 40, *Forest Management*	4	4
For. 57, 64, *Photogrammetry; Forest Industry Economy*	4	3
*For. (37), *Forest Recreation*		3
*For. 61, 62, *Problems*	2–4	2–4

WILDLIFE MANAGEMENT

FRESHMAN YEAR

Same as for Forestry General

SOPHOMORE YEAR

	First Semester Credits	*Second Semester Credits*
R.O.T.C.	1½	1½
Ag. Chem. 1, *Organic and Biological*	5	
Agron. 11, *Introductory Soils*	4	
Bot. 42, *Ecology*		3
C. E. (7), *Surveying*		3
Econ. 1, *Principles*	3	
Ent. 2, *Elementary*		3
For. 28, *Mensuration*		4
Zool. 7, 36, *General; Ornithology*	4	3

JUNIOR YEAR

Bot. 56, *Physiology*		4
Engl. (35), *Public Speaking*		3
For. 29, 44, *Silviculture; Forest Economics*	3	3
For. 33, 34, *Forest Protection; Wildlife Management*	3	3
Phys. 9, *Elementary*	4	
Zool. 77, *Vertebrate*	5	
*Social Science. Elective	3	3

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*Elective

Summer Session

For. 41, *Wildlife Management Practice*	10	

Senior Year

Engl. (23), *Writing Technical Reports*		2
For. 31, or 26, *Logging; Wood Identification*	4	3
For. 39, *Forest Management*	4	
For. 55, 56, *Advanced Wildlife Management*	4	4
Zool. 94, *Animal Ecology*		5
*Bot. 57, *Aquatic Botany*	2	
*Ent. 56 *Forest Insects*		2
*For. 57, *Photogrammetry*	4	
*For. 61, 62, *Problems*	2–4	2–4
*Geog. 21, *Weather*	2	
*Zool. 51, *Parasitology*	4	
*Zool. 56, *Invertebrate*		3

BACHELOR OF SCIENCE IN HOME ECONOMICS

There are four curriculums offered in Home Economics, all leading to a Bachelor of Science Degree in Home Economics: (1) General Home Economics, (2) Clothing and Textiles, (3) Food, Nutrition, and Institutional Administration, and (4) Teacher Preparation.

Those students desiring a broad and general education in preparation for homemaking are advised to take the General Home Economics Curriculum. Students desiring special training in preparation for professional careers should take one of the other curriculums, according to their interests and aptitudes.

A student majoring in any one of the above curriculums is required to meet the specific and additional minimum requirements of the College of Agriculture as listed below:

SPECIFIC REQUIREMENTS

Except for Physical Education these requirements should be completed during the freshman year.

Agriculture 1
Botany 1, Zoology 48, or Biology 1-2
Chemistry 1, 2 or 3, 4
English 1-2
Physical Education 1, 2, 3, 4, 5, 6

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*Elective

ADDITIONAL MINIMUM REQUIREMENTS

These requirements are ordinarily completed during the Sophomore, Junior, or Senior years.

Biological Sciences (Bact., Bot., Zool., Ent. 2)	3
Chemistry (Ag. Chem. or Chem.)	5
Economics 1	3
Economics or Agricultural Economics	3
English	5
Social Sciences (Govt., Hist., Psych., Soc., Ed. 41, 42, 52)	6

Suggested curriculums in Home Economics are as follows:

GENERAL HOME ECONOMICS

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
P. E. 1, 2	1	1
Ag. 1, *Orientation*	1	
Arts 23, *Elementary Drawing and Design*	2	
Biol. 1-2, *Man and the Living World* or Bot. 1, *General*, Zool. 48, *Principles*	4	3 or 4
Chem. 1-2, *General*	4	4
Engl. 1-2, *Freshman English*	3	3
H. E. 2, *Clothing Selection*		2
H. E. 10, *Food Selection*		2
Electives	3	3

SOPHOMORE YEAR		
P. E. 3, 4	1	1
Ag. Chem. 1, *Organic and Biological*	5	
Ag. Chem. 6, *Chemistry of Food and Nutrition*		3
Econ. 1-2, *Principles*	3	3
H. E. 3, *Textiles*	3	
H. E. 6, *Principles of Clothing Construction*		3
H. E. 15-16, *Food Preparation*	3	3
Psych. 1, *General*	3	
English Elective		3

JUNIOR YEAR		
P. E. 5, 6	1	1
Ag. Eng. 2, *Housing and Home Equipment*		3
Bact. 1, *General*	4	
H. E. 25-26, *Child Development*	3	3
H. E. 32, *Interior Decoration*		3
H. E. 33, *Home Management*	3	
H. E. 35, (35), *Home Management Residence*	3	3
Soc. 1, or 44, *Principles* or *Social Psychology*	3	3

SENIOR YEAR		
H. E. 83, *Home and Family Living*	3	
English Elective	2–3	
Electives		

CLOTHING AND TEXTILES

FRESHMAN YEAR

	First Semester Credits	*Second Semester Credits*
P. E. 1, 2	1	1
Ag. 1, *Orientation*	1	
Arts 23-24, *Elementary Drawing and Design*	2	2
Bot. 1, *General*	4	
Chem. 3-4, *General*	4	4
Engl. 1-2, *Freshman English*	3	3
H. E. 2, *Clothing Selection*		2
H. E. 10, *Food Selection*		2
Math. (2), or 11, *Algebra*	3	
Zool. 48, *Principles of Zoology*		3

SOPHOMORE YEAR

P. E. 3, 4	1	1
Bact. 1, *General*, or Physics 9, *Elementary Physics*	4	
Chem. (45), *Organic Chemistry*		5
Econ. 1-2, *Principles*	3	3
H. E. 3, *Textiles*	3	
H. E. 6, *Principles of Clothing Construction*		3
H. E. 15-16, *Food Preparation*	3	3
Psych. 1-2, *General*	3	3

JUNIOR YEAR

P. E. 5, 6	1	1
B. A. 46, *Principles of Retailing*		3
Econ. 25, *Marketing*	3	
H. E. 25, *Child Development*	3	
H. E. 32, *Interior Decoration*		3
H. E. 60, *Flat Pattern*		3
H. E. 61, *Tailoring*	3	
Phys. 9, *Elementary Physics*, or Bact. 1, *General*	4	
English Electives	2–3	2–3
Electives	1–2	5–6

SENIOR YEAR

H. E. 33, *Home Management*	3	
H. E. (35), *Home Management Residence*		3
H. E. 63, *Draping*	3	
H. E. 64, *Adv. Textiles*		3
H. E. 65, *History of Costume*	3	
H. E. 66, *Costume Design and Fashion Illustration*		2
H. E. 68, *Fundamentals of Fashion*		3
H. E. 83, *Home and Family Living*	3	
Soc. 1, *Principles of Sociology*	3	
Electives	3	7

FOODS, NUTRITION, AND INSTITUTIONAL ADMINISTRATION

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
P. E. 1, 2	1	1
Ag. 1, *Orientation*	1	
Arts 23, *Elementary Drawing and Design*	2	
Bot. 1, *General*	4	
Chem. 3-4, *General*	4	4
Engl. 1-2, *Freshman English*	3	3
H. E. 2, *Clothing Selection*		2
H. E. 10, *Food Selection*		2
Math. (2), or 11, *Algebra*	3	
Zool. 48, *Principles of Zoology*		3
SOPHOMORE YEAR		
P. E. 3, 4	1	1
Chem. 17, 26, *Introductory Quantitative and Qualitative Analysis*	4	4
Chem. 45, *Organic Chemistry*	5	
Econ. 1, *Principles*	3	
H. E. 6, *Principles of Clothing Construction*		3
H. E. 15-16, *Food Preparation*	3	3
Psych. 1, *General Psychology*	3	
English Elective		3
JUNIOR YEAR		
P. E. 5, 6	1	1
Ag. Chem. 51, *Physiological Chemistry*	4	
H. E. 46, *Textiles and Furniture*		3
H. E. 49-50, *Quantity Cookery*	3	3
H. E. 73, *Nutrition*	3	
H. E. 74, *Nutrition in Health and Disease*		3
Phys. 9, *Elementary Physics*	4	
Psych. (47), *Mental Hygiene*		3
Zool. 17-18, *Human Anatomy, Human Physiology*	4	4
H. E. 48, *Field Work* — 2-6 credits at end of Junior Year.		
SENIOR YEAR		
Bact. 1 or 5, *General*, or *Public Health and Sanitation*	3	
H. E. 25, *Child Development*	3	
H. E. 33, *Home Management*	3	
H. E. 35, (35), *Home Management Residence*	3	3
H. E. 41, *Institutional Management*	3	
H. E. 43-44, *Institutional Practice*	2	2
H. E. 76, *Nutrition Seminar*		3
H. E. 93, *Nutrition Education*	3	
English Electives		2–3
Electives		7–8

TEACHER PREPARATION IN HOME ECONOMICS

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
P. E. 1, 2	1	1
Ag. 1, *Orientation*	1	
Arts 23, *Elementary Drawing and Design*	2	
Biol. 1-2, *Man and the Living World* or Bot. 1, *General,* Zool. 48, *Principles*	4	3–4
Chem. 1-2, *General*	4	4
Engl. 1-2, *Freshman English*	3	3
H. E. 2, *Clothing Selection*		2
H. E. 10, *Food Selection*		2
Electives	3	3

SOPHOMORE YEAR

P. E. 3, 4	1	1
Ag. Chem. 1, *Organic and Biological*	5	
Ag. Chem. 6, *Chemistry of Food and Nutrition*		3
Ed. 41-42, *Educational Psychology*	3	3
Engl. (35), *Public Speaking*		3
H. E. 3, *Textiles*	3	
H. E. 6, *Principles of Clothing Construction*		3
H. E. 15-16, *Food Preparation*	3	3
Psych. 1, *General*	3	

JUNIOR YEAR

P. E. 5, 6	1	1
Bact. 1, *General*	4	
Econ. 1-2, *Principles*	3	3
Ed. 52, *Principles of American Secondary Education*		3
H. E. 25-26, *Child Development*	3	3
H. E. 32, *Interior Decoration*		3
H. E. 73, *Nutrition*	3	
Ag. Eng. 2, *Housing and Home Equipment*		3
Soc. 44, *Social Psychology*		3
Elective	3	

SENIOR YEAR

H. E. 33, *Home Management*	3	
H. E. 35, (35), *Home Management Residence*	3	3
H. E. 83, *Home and Family Living*	3	
H. E. 84, *Personal, Family, and Community Health*		2
H. E. 91, *Principles and Problems of H. E. Education*	3	
H. E. 94, *Supervised Teaching in Home Economics*		6
H. E. 96, *Seminar in Home Economics Education*		3
H. E. 98, *Principles and Techniques of Demonstrations*		3
English Elective	2 or 3	
Elective	3	

TWO-YEAR NON-DEGREE CURRICULUM

The Thompson School of Agriculture at the University of New Hampshire offers to such young men and women who are interested in farming and allied occupations the opportunity to secure scientific and practical agricultural training in two years of study. These vocational curriculums are designed particularly for those who wish to become farmers or to seek employment in related activities. Some of the more common types of opportunities available for the two-year student follow:

Farming — owner, renter, operator
Farm manager or estate superintendent
Herdsman or assistant
Milk plant operator or assistant
Poultry plant foreman
Feed and fertilizer store operator or assistant
Greenhouse or landscape work
Skilled worker for nurserymen and seedsmen
Farm machinery worker — sales, service, or operation
Worker in retail agricultural marketing
Milk testers
Caretaker of estate
Superintendent, foreman, or worker in parks
Worker in a commercial dairy manufacturing and distributing plant

Admission Requirements

The Thompson School of Agriculture is open to both young men and young women. Graduates of high schools will be admitted irrespective of age. Applicants who are not high-school graduates must be 18 years of age and must have had at least two years of high-school work or its equivalent. Judgment and understanding will be carefully considered in determining those who will be admitted. A farm background, though not required, will prove exceptionally valuable.

Requirements for Graduation

The completion of the program requires two calendar years. The instruction is divided as follows: the student obtains two semesters of classroom and laboratory work on Campus, followed by a summer of "Supervised Agricultural Placement" each year. However, it is possible for a person to attend the Thompson School of Agriculture for only two or more semesters and acquire considerable valuable information, and first-hand knowledge of farming. Upon satisfactory completion of four semesters on Campus, with a minimum of 64 semester credits plus two summers of Agricultural Placement in the order described, the student will be awarded a certificate of graduation.

The Agricultural Placement will be adapted to the personal needs and interests of the individual. This work may be conducted on the home farm, on some good commercial farm known to the student, or in some related agricultural occupation in which the student plans to engage. All placement situations selected by the student, through his own initiative, must be approved by the school staff. Every effort will be made to find suitable placement positions for students who are unable to locate such positions for themselves.

This practical training, required during each summer, will be under the direct guidance and supervision of the teaching staff. Certain records and reports are required of the student while on placement, and no student will be granted a certificate until such records and reports are complete.

Major Fields of Instruction

There are four major fields of instruction: Dairying, General Farming, Horticulture, and Poultry. The student will select the one he wishes to pursue and may elect courses in other fields in order to provide for a well-balanced program.

Facilities for Instruction

Facilities of the University, including the University Farm, Dairy Herd, Milk Plant, Poultry Plant, Horticulture Farm, Livestock Department, greenhouses, and laboratories, are available for instructional purposes.

Student Aid

Employment is usually available for the student who needs it and is willing to work. Tuition Grants amounting to approximately one half the tuition are available for residents of New Hampshire. These Tuition Grants will be awarded to such applicants as appear upon investigation to be needy and deserving. It is hoped that every worthy individual who could not otherwise attend may be helped in this way. However, these funds are by no means inexhaustible and prospective students are urged to apply early if they need help.

Facilities for Instruction

Persons who are interested in the Thompson School of Agriculture should write for a complete descriptive catalogue. Such requests should be made to the Thompson School of Agriculture, 14 Putnam Hall, University of New Hampshire, Durham, N. H.

The College of Liberal Arts

EDWARD Y. BLEWETT, *Dean*

PAUL E. SCHAEFER, *Associate Dean*

DEPARTMENTS

THE ARTS
  Fine Arts, Design, Crafts, Occupational Therapy, and Photography
BACTERIOLOGY
  Medical Technology
ECONOMICS AND BUSINESS ADMINISTRATION
  Business, Economics, and Secretarial Studies
EDUCATION
ENGLISH
  Speech
GEOLOGY AND GEOGRAPHY
GOVERNMENT
  Public Administration Service
HISTORY
HOTEL ADMINISTRATION
LANGUAGES
  French, German, Greek, Italian, Latin, and Spanish
MUSIC
PHILOSOPHY
PSYCHOLOGY
SOCIOLOGY
  Social Service
ZOOLOGY
  Nursing and Pre-Medicine

The Departments of Chemistry, Mathematics, and Physics in the College of Technology and the Departments of Botany and Entomology in the College of Agriculture offer major programs for students in the College of Liberal Arts.

PURPOSE AND OBJECTIVES

The College of Liberal Arts exists to serve society through meeting the vital educational needs on the campus or in the State. While it prepares some students for scholarly achievement in graduate and professional schools and trains others for immediate gainful service, it develops in all its students understanding, interests, appreciation, and abilities which make possible the living of a richer and more satisfying life.

It is the purpose of the College of Liberal Arts to help all its students to become better adjusted to the world in which they live, to increase their efficiency as students, to learn how to work and to enjoy work as well as leisure, to solve their college and life problems, and to prepare themselves for intelligent participation in the activities of modern life as socially competent human beings willing to meet their responsibilities to society.

To accomplish its general educational purpose, the College of Liberal Arts cooperates with its students in their efforts to acquire:

(1) The ability to understand and use language, particularly English, for clear and effective interchange of ideas;

(2) An understanding and appreciation of the principles of the physical and biological sciences as they apply to man;

(3) An understanding of the principles underlying the social, psychological, political, and economic activities of man;

(4) An understanding and appreciation of all peoples and their cultures, both contemporary and historical, for intelligent participation in society;

(5) An understanding and appreciation of literature and the other arts;

(6) An understanding and appreciation of the religious heritage of man and its significance for present-day living;

(7) An understanding of personal and community health;

(8) An understanding of the interrelation of the various fields of knowledge;

(9) A competence in a selected field of knowledge, based on a concentration of studies for vocational or other interests;

(10) Aid in selecting and preparing for a suitable profession or vocation;

(11) A variety of interests outside of the selected field of knowledge, for the purpose of providing avocations or occupations for leisure time in post-college days;

(12) An eagerness for knowledge as a means to continuous self-education;

(13) The ability to seek, discover, and analyze data and therefrom make valid generalizations;

(14) The ability to form unbiased and rational judgments of other individuals and their ideas;

(15) The desire to discover and accept responsibilities, for the improvement of human living;

(16) Principles and convictions about life which may change as experience increases, and upon which their whole conduct shall be founded.

ORGANIZATION

The development of common interests and the coordination of educational efforts in behalf of students in the College are promoted by Divisions as follows: Biological Sciences, Humanities, Physical Sciences, Social Sciences, and Teacher Education. The personnel of each division includes all Faculty members assigned to departments of the College, and to departments of other colleges which are authorized to offer major programs or prescribed curriculums in the College of Liberal Arts.

The *Humanities Division* is composed of the staffs of the Departments of The Arts, English, Languages, Music, and Philosophy. The *Social Sciences Division* is composed of the staffs of the Departments of Economics and Business Administration, Government, History, Hotel Administration, Psychology, Sociology, and the Department of Home Economics in the College of Agriculture. The *Physical Sciences Division* is composed of the staffs of the Department of Geology and Geography, and the Departments of Chemistry, Mathematics, and Physics in the College of Technology. The *Biological Sciences Division* is composed of the staffs of the Departments of Bacteriology and Zoology, and the Departments of Botany and Entomology in the College of Agriculture. The *Division of Teacher Education* consists of the members of the instructional staff of the University who are teaching professional courses in Education. These include courses in the problems of teaching the subjects taught in the public schools and the courses in Physical Education, in The Arts, and in Music, designed to prepare teachers.

The offerings of the College of Liberal Arts are divided into two groups: the *General Liberal Arts Curriculum* and the *Prescribed Curriculums.* The descriptions of the University Teacher Preparation Curriculums follow the Prescribed Curriculums.

GENERAL LIBERAL ARTS CURRICULUM

The General Liberal Arts Curriculum is intended primarily to give opportunity for a broad, liberal program, a general education leading to the Bachelor of Arts Degree.

A student enrolled in the General Liberal Arts Curriculum will major in some subject or field of knowledge. Some of these major programs offer, at least in part, direct professional training. The *General Liberal Arts Curriculum* must not be confused with the *Prescribed Curriculums.* The latter are essentially professional in character.

The objectives, opportunities, and requirements of majors in the General Liberal Arts Curriculum are described in the paragraphs which follow. It is possible, also, for students in the General Liberal Arts Curriculum to arrange programs of study in addition to those described below, although such students will be held strictly to the University and College requirements of the General Liberal Arts Curriculum. *Students interested in arranging special programs of study should consult the Dean of the College.*

The Arts

The courses in this Department are designed to develop intelligent enjoyment and a critical understanding of art, and to provide facilities for creative expression.

Several types of programs may be arranged for individual students. For some who have special creative abilities there are courses in Painting, Sculpture, Ceramics, Metalwork and Jewelry, Weaving, Textile Design, Minor Crafts, Photography, and Design. For others who are interested primarily in the application of art to business and industry, there are some opportunities for study in Industrial Design, Advertising Art, Photography, and Interior Decoration. The Department also offers opportunity to all who are interested particularly in the critical appreciation of art.

Students majoring in other areas in which a knowledge of the arts is desirable, such as Business, Education, Hotel Administration, and Home Economics, should consider taking one or several courses in The Arts.

Students interested in teaching art in the secondary schools are advised to consider the Art Education Curriculum.

Students majoring in The Arts are expected to meet in full the requirements of the General Liberal Arts Curriculum which are set forth on page 90. They must also earn 24 semester credits, with grades of C or better, in courses in The Arts. The following courses are required for The Arts major: Arts 23, *Basic Design* (does not carry major credit); Arts 31, 32, *Introduction to The Arts.* Courses in Dramatics, Literature, Music, and Home Economics may be approved as related work for a major in The Arts with the consent of the supervisor and the College Dean. The courses of each major program are selected to meet the needs of the individual student, as determined by the student and his supervisor in personal conference. An assigned major work and/or a paper in the student's area of specialization will be required in the Senior year.

Students interested in majoring in *The Arts* are advised to consult with the supervisor, Professor G. R. Thomas, Room 218, Hewitt Hall.

Bacteriology

Students interested in the study of bacteria and related microorganisms should register as majors in Bacteriology. Such students may prepare themselves for positions in federal, state, or city laboratories and for employment in universities, experiment stations, research institutes, and industrial organizations.

The program is arranged to meet the needs of two groups of majors; *i.e.*, those who plan to obtain employment as laboratory technicians after receiving the Bachelor of Arts degree and those who plan to take graduate work in Bacteriology, which is necessary for advancement and preferred employment in the field. Students primarily interested in hospital laboratory work should consult the *Medical Technology Curriculum.*

Students who major in Bacteriology are expected to meet in full the requirements of the General Liberal Arts Curriculum, which are set forth on page 90. They are expected also to complete courses offered by the Department, and by related departments, to a total of 24 semester credits, with grades of C or better. *A course in Organic Chemistry is also required for Bacteriology majors but cannot be counted as part of these 24 major credits.* The courses of each major program are selected to meet the needs of the individual student, as determined by the student and his supervisor in personal conference.

Students interested in majoring in *Bacteriology* are advised to consult with the supervisor, Professor L. W. Slanetz, Room 215, Nesmith Hall.

Biology

Students who are interested in a broad training in the life sciences are advised to major in Biology. Such students will be required to take courses in Bacteriology, Botany, Entomology, and Zoology in building up a program. The field, however, is so inclusive that the majority of students will find it desirable to include one or two additional courses in one of the subdivisions, such as Bacteriology, Botany, or Zoology. In addition, it is suggested to students who desire to study Biology for general education that those who are interested in *Applied Biology* and *Secondary-School Teacher Preparation* register as Biology majors.

TEACHER PREPARATION — Students who are planning to teach Biology in secondary schools are urged to plan for practice teaching during the Senior year. As few positions are available in any year for teaching Biology alone, a student should include courses in his program of study which will qualify him for teaching other sciences.

APPLIED BIOLOGY (*Fish and Game Management, etc.*) — Students preparing for positions which involve the application of the science of Biology, such as those frequently listed by the Federal Civil Service and by the State Governments, should follow the general program of Biology majors and should elect one or two additional courses in fields of Applied Biology. The Division is well fitted to prepare students for work in Fish and Game Management, Conservation Education, and in State Departments of Conservation. Students preparing for professions in this group should plan to secure advanced degrees, since positions in these fields are difficult to secure without graduate study. Students who are interested in hospital laboratory work should consult the *Medical Technology* Curriculum.

Satisfactory completion of the requirements of a Biology major will generally qualify students for admission to graduate schools to specialize in Biology or in one of its major subdivisions.

Students who major in Biology are expected to meet in full the requirements of the General Liberal Arts Curriculum (see page 90). They are expected also to complete courses offered by the Division to a total of 24 semester credits (exclusive of Biology 1-2) with a grade of C or better. The minimum course requirements for Biology majors include Bacteriology 1; Botany 3; one course selected from Botany 6, 12, 42, or 56; Entomology 2; Zoology 7; and one other course in Zoology (except Zoology 87-88 or 97-98). *Biology majors are also required to complete Chemistry 3-4 and eight additional hours in physical science (Chemistry, Geology, Mathematics, Physics). These courses in physical science cannot be offered as major credit.* Students interested in majoring in *Biology* are advised to consult with the supervisor, Professor M. Jean Allen, Room 219A, Nesmith Hall.

Botany

Students who are interested in plant life are advised to consider registration as majors in Botany. Such students, except for those who concentrate in Botany as part of a general education, should expect to continue in graduate study here or elsewhere. Goverment work, institutional research, certain types of industrial positions, and college teaching are open to Botany students with advanced preparation. The principal fields of concentration in Botany are: (1) Pathology, (2) Physiology, (3) Taxonomy, (4) Ecology, and (5) Morphology and Cytology.

Students who major in Botany are expected to meet in full the requirements of the General Liberal Arts Curriculum which are set forth on page 90. They must also complete courses offered by the Department, to a total of 24 semester credits with grades of C or better. Courses in other departments closely related to the major courses may be counted with the consent of the major supervisor and the College Dean. A broad background in chemistry and other biological sciences is considered essential for most majors.

The courses of each major program are selected to meet the needs of the individual students, as determined by the student and his supervisor in personal conference.

Students interested in majoring in *Botany* are advised to consult with the supervisor, Professor A. R. Hodgdon, Room 218, Nesmith Hall.

Chemistry

Students who are interested in the study of Chemistry will find opportunities in different fields such as (1) individual work involving the development of processes or production activities or sales work based on a scientific knowledge of the marketable product; (2) the teaching of Chemistry and allied subjects in secondary schools or of Chemistry in colleges; (3) graduate study for those students who are interested and particularly proficient in their undergraduate work.

The University offers two channels for study of Chemistry; majoring in the subject in the College of Liberal Arts, or enrolling in the *Prescribed Curriculum in Chemistry* in the College of Technology. In the College of Liberal Arts a major should complete Chemistry 3-4 or 3-6, *General Chemistry*, certain courses in Mathematics and Physics, and in addition other courses offered by the Department in *Analytical*, *Organic*, and *Physical Chemistry* to a minimum of 24 semester credits, with grades of C or better. According to the student's interests, other supporting subjects may be elected to form a broad program of study and to prepare for some one of the opportunities listed above. Majors in Chemistry are expected to meet in full the requirements of the General Liberal Arts Curriculum, which are set forth on page 90.

The Department is equipped to furnish the preparation necessary for teaching Chemistry in secondary schools. As very few positions are available in any year for teaching Chemistry alone, a student should consider a program of study which may qualify him for teaching Chemistry and other sciences, and should consult Professor Iddles and Professor T. O. Marshall of the Department of Education. Students who are interested in teaching Chemistry in college are advised to plan on graduate study. Students who plan to major in *Chemistry* are advised to consult with the supervisor, Professor H. A. Iddles, Room 117, James Hall.

Economics

Students who are interested in economic and business life, but do not desire to specialize intensively in the *Business Curriculum* or the *Secretarial Curriculum*, are advised to consider registration as majors in Economics. Students who intend to enter upon graduate study in Economics should plan to major in this field as undergraduates. An increasing number of opportunities in business and the public service are open to young people who possess graduate preparation in Economics.

Business positions in retail stores, chain stores, banks, sales organizations, general business offices, insurance, and other firms, have been successfully filled by graduates of the University who have majored in Economics. The Business Curriculum provides specific preparation for several of these fields by reason of its specialized requirements. A student who desires breadth in his education, with an emphasis on Economics, is counselled to major in the Department.

The Department is equipped to furnish the preparation necessary for teaching Economics in secondary schools. As very few positions are available in any year for teaching Economics alone, a student should consider a program of study which may qualify him for teaching Economics and other social studies, and should consult the supervisor, and Professor T. O. Marshall of the Department of Education.

Students who major in Economics are expected to meet in full the requirements of the General Liberal Arts Curriculum which are set forth on page 90. They are required to complete successfully Economics 1-2, *Principles of Economics;* and Economics 31, *Economic and Business Statistics.* They are required to complete 24 semester credits of Economics, with grades of C or better. Of these 24 semester credits, a minimum of 12 credits must be in courses in Economics numbered 51 or higher. *Major credit towards the 12 semester hours required in courses numbered above 50 will be approved in the case of transfer students only if such courses have been taken as upper division courses, i.e., in the Junior or Senior Year.* Individual programs will be ar-arranged to meet the needs of the individual student. *Business Administration,* 1-2, 21-22, 68, and 70 may be counted for major credit in *Economics. Business Administration* 68 and 70 may be counted in partial fulfillment of the requirement that 12 semester credits be in courses numbered 51 or higher.

Students interested in a major in Economics should consult with the supervisor, Professor C. M. Degler, Room 104, Morrill Hall.

Education

Students who are interested in preparing themselves for teaching in the secondary schools and who do not desire to follow any of the University Teacher Preparation Curriculums should consult with Professor T. O. Marshall of the Department of Education, Room 3, Murkland Hall. Under most circumstances it is possible for such students to prepare themselves for teaching as majors in the subject-matter department in which they desire to teach. In other instances, it may be wise for them to do their work as majors in Education.

One group majoring in Education does so to prepare to teach in secondary schools. They are required to complete 24 semester credits in Education, with grades of C or better, *which must include a minimum of six semester credits in supervised practice teaching and a minimum of 15 semester credits in Education courses other than practice teaching.* These students are also required to complete, with an average grade of at least C, (1) a teaching major of at least 24 semester credits of post-secondary school work in a subject-matter field, and (2) either a second teaching major of at least 18 semester credits, or two teaching minors of 12 semester credits each.

A second group of majors in Education is composed of those students who are interested in teaching or in supervising in elementary schools, and who are graduates of two- or three-year Normal Schools or Teachers Colleges. They are required to complete, with grades of C or better, 12 semester credits of work in Elementary Education selected from the advanced courses in that subject offered in the Summer Session as a part of the total credits which are required of them as candidates for the Degree of Bachelor of Arts. Such students will select the remainder of their major programs with the advice and approval of the Chairman of the Department of Education. (See special Language requirement, page 90.)

While some courses offered in Education are designed to be of interest to the general student, only those students who have definitely decided to prepare themselves for the teaching profession should seriously consider majoring in the Department of Education. *All students, before entering Education 58, are required to take a battery of teacher aptitude examinations.*

Professor T. O. Marshall, Room 3, Murkland Hall, is the supervisor of all majors in Education. Arrangements will be made, however, to enable majors in Education to be advised in particular problems by members of the staff who are best qualified to be of service to them.

English

The Department of English offers two programs of study: the *literature* major and the *teaching* major.

I. The *literature* major must fulfill the requirements of the General Liberal Arts Curriculum (page 90.) He must also take six credits from among the following courses:

English 13, 14
English 15, 16
English 25, 26
English 33, 34, 35, 47
English 43, 44, 45

He must earn grades of C or better in 24 semester credits in literature courses numbered above 50: of these 6 credits must be in Shakespeare (English 57, 58); 6 credits in American literature (this requirement may be satisfied by English 15, 16, but the 6 credits thus earned cannot be counted toward the 24 major credits); and an additional 12 credits in at least three centuries of literature prior to the twentieth. He must read the works of English and American literature that appear on the Departmental Reading List, which will be issued to him. He may elect either to cover this material in tutorial sessions or to take written examinations upon it. On request he will be given copies of previous examinations.

II. The *teaching* major must meet in full the requirements of the General Liberal Arts Curriculum (page 90.)* He must take the following courses, 24 credits of which must be with a grade of C or better.

English 13, 14
English 16
English 25
English 27
English 22, 33, or 48
English 36
English 43, 44, or 45
English 57 or 58
English-Education 91

Students who are interested in majoring in English should consult the supervisor, Professor S. H. Bingham, Room 118, Murkland Hall.

Entomology

The Department of Entomology offers various courses for students who wish to concentrate on the study of insects, insect life, and the control of insects. Although the field of employment is limited, there are definite opportunities available to those who are qualified. The majority of these opportunities are in the public service, although commercial and industrial firms also employ college graduates who have concentrated in Entomology. Graduate study is desirable for the student who seeks high achievement in Entomology. A more intensive program in Entomology may be secured in the *Prescribed Curriculum* offered in the *College of Agriculture.*

Students who major in *Entomology* are expected to meet in full the requirements of the General Liberal Arts Curriculum, which are set forth on page 90. They are expected also to complete successfully courses offered by the Department, to a total of 24 semester credits, with grades of C or better. Courses in other departments may be counted with the consent of the major supervisor and the College Dean. Outlines of specific suggested programs of study are available to the student upon request to the supervisor, Professor J. G. Conklin, Room 16, Nesmith Hall.

General Physical Science

A student having broad interest in physical science, but no professional objective in any one of the recognized sciences in this field, may register as a *General Physical Science* major.

Students who major in General Physical Science are expected to meet in full the requirements of the General Liberal Arts Curriculum which are set forth on page 90. In addition, they must obtain a grade point average of 2.3 or better in these courses: Mathematics 11, *Algebra,* 13, *Trigonometry,* 14, *Analytic Geometry,* 16, *Calculus I,* and 30, *Astronomy;* Chemistry 3-4, *General Chemistry,* and 26, *Introductory Qualitative Analysis;* Geography 21, *The*

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*In order to teach in New Hampshire the student must also fulfill the requirements in Education prescribed by the New Hampshire State Board of Education.

Weather, and 22, *Climates of the World;* Geology 1-2, *Principles of Geology;* and Physics 1-2, *Introductory Physics.*

Students who are interested in choosing General Physical Science as a major should consult with the supervisor, Professor T. R. Meyers, Room 112, Conant Hall.

Geology

The field of Geology includes the earth sciences. This is not alone the study of minerals, rocks, and evidence of prehistoric life. It includes also the history of the earth from its beginning, as well as the evolution of the landscape, and other environmental features which have influenced the development of life on the earth, including man.

Students who are interested in the earth sciences, both those who expect to make some phase of Geology their life work, and those who desire to build a program of liberal studies around a core of geological and related subjects, are advised to register as majors in *Geology.*

The search for new sources of essential mineral resources and the development of new uses for certain minerals have emphasized the need for men trained in the earth sciences. Positions as mining geologists, petroleum geologists, mine operators, federal and state survey geologists, and university and college professors of geology and mineralogy have been successfully filled by graduates of the University who have majored in Geology. Other former major students are teaching in high schools or are in business, some in fields where their geologic preparation is useful, as in the cement and mining-machine industries.

Students who major in Geology are expected to meet in full the requirements of the General Liberal Arts Curriculum, which are set forth on page 90. They are expected also to complete Geology 1-2, *Principles of Geology*, and, in addition, courses in Geology or related courses approved by the supervisor and the College Dean to a total of 24 semester credits with grades of C or better. The courses of each major program are selected to meet the needs of the individual student, as determined by the student and his supervisor in personal conference.

At the end of the Senior year, a student who majors in Geology must, after consultation with his supervisor, submit either a satisfactory paper or pass a written comprehensive examination.

Students who are interested in majoring in *Geology* are advised to consult with the supervisor, Professor T. R. Meyers, Room 112, Conant Hall. After a student's major interest is determined, the advice, assistance, and counsel of one or more additional members of the Department will be sought where a special area of concentration is contemplated by the student. For example, the student whose special interest lies in geographic or meteorologic fields will be assigned to the staff member responsible for these fields.

Government

The courses offered by the Department of Government are designed to aid the student in gaining a knowledge of the nature, functions, and problems of Government, and of the place of Government in the modern world. For this general purpose, courses are offered in public affairs — local, state, national, and international. Some courses listed by the Department are chiefly intended to provide information needed for intelligent and responsible citizenship and to provide a part of a liberal education. Others are of a specialized nature and have been planned to provide basic preparation for professional work. A few are intended to stress the historical and philosophic development of the growth of political thought and institutions.

By specializing in one of several programs of Government, the major student may prepare himself for (1) graduate study in Political Science and Government, (2) Public Administration, (3) Research in Government, (4) the study of Law, (5) graduate study for the Foreign Service, (6) teaching Government courses in secondary schools. Students who are preparing to teach Government courses in the secondary schools should check their planned program of study with Professor T. O. Marshall of the Department of Education. Ordinarily, prospective teachers in government will find it necessary to teach related courses in the social sciences.

For students with a special interest in Public Administration, a limited number of Internships in Public Office (Soc. Sci. 81) have been established, which permit Senior students to obtain first-hand knowledge about public service by working (for college credit) in an office at the State Capitol for a semester. Majors in Government also have an unusual opportunity for mastering research techniques and gaining practical information concerning state and local government in New Hampshire through work as an "apprentice in government" (Government 60) or by a special project in government research (Government 65 and 66).

Majors in Government are expected to meet all requirements for the General Liberal Arts Curriculum on page 90. All major students are required to take Government 1, *American Government*, and one of the following three courses: Government 2, *Problems in American Government*, Government 3, *Elements of Political Science*, or Government 4, *America in World Affairs.* Students who expect to major in Government are advised to register for these courses during the Freshman year. Students majoring in Government are also required to complete a research paper approved by the staff. This project constitutes the chief part of the Research Problems course (Government 65 or 66). A major consists of a minimum of 24 semester credits of work with grades of C or better in Government and in any related courses which may be approved by the supervisor and the College Dean. The 24 semester credits should include not less than 12 in courses below 50, exclusive of the 6 introductory credits. Not more than 9 credits earned as an Intern, in Social Science 81, may be counted toward the completion of the major requirements. Each student will be counselled individually and his program of study planned for his needs.

Students interested in electing *Government* as a major should meet with the supervisor, Professor J. T. Holden, Room 204, Morrill Hall.

History

History, as a field in which to major, may be of interest to the following groups of students: (1) Those who wish to do college teaching in History. Graduate study is indispensable for such work, but preparation may be made for it by a certain amount of undergraduate specialization. (2) Those who plan to teach History in secondary schools. For such a position, training in other social studies is highly desirable, if not absolutely necessary. The student is therefore advised to keep in touch with the Department of Education as well as with the Department of History, with a view to satisfying teaching certification standards and building a well-rounded program of studies. (3) Those who intend to enter other professional fields in which a considerable amount of historical knowledge is desirable. Such a field, for example, might be that of library training in which an historical preparation would rank with study in literature as a background, or the increasingly important profession of Archivist. (4) Any students who feel free to plan the college program without too specific a reference to a vocation, and who have a special interest in History.

Students who major in *History* are expected to meet in full the requirements of the General Liberal Arts Curriculum which are set forth on page 90. They must also earn 24 semester credits in courses in History, with grades of C or better, exclusive of History 1, 2. They must elect a minimum of six semester credits from *Group A* and a minimum of six semester credits from *Group B.* (See the description of courses offered by the Department.) A student who majors in *History* must prepare a satisfactory paper on a subject approved by the supervisor, in the student's field of concentration. The student must secure approval of the subject chosen, from the Chairman of the Department, before December 15 of the student's senior year and the completed paper must be filed with the Chairman of the Department before April 1 of the year in which the degree is to be granted.

Students planning to major in *History* should consult the supervisor, Professor P. M. Marston, Room 204C, DeMeritt Hall.

History and Literature

Students who desire a broad education may take a combined major in History and Literature. Students who plan to enter library service may also find here a desirable major. The program of this major offers an opportunity to study the history and literature together of Greece and Rome, of France, of Germany, or of Spain. A still broader survey of European history and of its literature is also possible. The program involves the completion of 24 semester credits with grades of C or better in one of the following groups of courses, of which 12 credits should be in History and 12 in Languages:

(a) History 11, 12, 13, 14;
Latin 5-6, 53-54, 55-56;

(b) History 9, 10, 19, 20, 83, 84;
Spanish 5-6, 51, 52, 55, 56, 65, 66;

(c) History 14, 19, 20, 83, 84, 87, 88;
French 5-6, 51-52, 53-54, 55-56;

(d) History 14, 19, 20, 83, 84, 87, 88;
German 5-6, 53-54, 55-56, 57-58;

(e) 6 credits in either Languages 1, 2 or 51, 52;
6 credits in French, German, Latin, or Spanish in courses numbered 5 or higher;

12 credits in courses in Groups A or B in the Department of History.

A student who has met the major requirements in History and Literature and other requirements of the General Liberal Arts Curriculum as listed on pages 90 and 91 will be recommended for the Degree of Bachelor of Arts with the notation "History and Literature" on the Commencement Program.

Students' registration cards may be signed by either Professor P. M. Marston, Chairman of the Department of History, Room 204C, DeMeritt Hall, or Professor J. S. Walsh, Chairman of the Department of Languages, Room 119, Murkland Hall.

Students electing group (b), (c), or (d) will be encouraged to do a considerable part of their reading for the History courses in Spanish, French, or German, respectively.

Languages

A major student in the Department of Languages may have a professional or cultural objective. Many majors plan to enter secondary-school or college teaching. For such students there is no hard and fast curriculum. The arrangement of Language courses is sufficiently flexible to meet the individual's needs. As most language teachers are obliged to teach more than one language, or one language in combination with other subjects, students should not plan to concentrate in a single language and its literature, but to map out a program including two languages (preferably French and Latin), or one language with a number of courses in English or History. Students who may desire departmental recommendations for teaching a modern language should include French 13-14, German 13-14, or Spanish 13-14 in their major programs. Prospective teachers should consult the Chairman of the Department, Professor J. S. Walsh, and Professor T. O. Marshall of the Department of Education. Some departmental majors plan to enter library service. Most library schools require two foreign languages.

Major students who do not plan to teach usually have a cultural objective. Here again the flexibility of the departmental offerings makes it possible to arrange individual programs for individual students. Some students find a special appeal in a single foreign literature and wish to explore it thoroughly. Others find that the study of two or three languages and literatures is a broadening and stimulating experience.

For non-majors, the Department offers practical courses which are a valuable aid to careers in foreign service (consular, diplomatic, commercial, military or naval), journalism (for international news, foreign books, and the like), interpreting, translating, travel agencies, radio announcing, etc. A knowledge of foreign languages is invaluable for the historian, the architect, the musician, the artist, the political and social scientist, and for any citizen who is interested in foreign affairs. The biologist, chemist, or physicist should always be able to read foreign articles and keep up with research in his field in foreign countries. As most graduate schools require a knowledge of one or two foreign languages, all students who may possibly do graduate work in any field should obtain a reading knowledge of French and German. The elementary courses in French, German, Italian, and Spanish are planned particularly to help students acquire an ability to read and to speak the respective languages; at the same time, through reading and oral work, the student learns something of the history, institutions, customs, and spirit of a foreign country. Latin is the basis of all language study and the study of the Romance languages in particular.

For non-majors there are offered three courses which are given in English. These courses offer respectively a Survey of Greek and Latin Literature (in translations), a Survey of Modern European Literatures (in translation), and an Introduction to Romance Philology.

Students majoring in the Department of Languages must designate *French, German, Latin, Romance Languages*, or *Spanish* as their particular major. Elementary courses (French 1-2, German 1-2, Greek 1-2, Italian 1-2, Latin 1-2, and Spanish 1-2) cannot be counted for major credit. A major in a single language (French, German, Latin, or Spanish) must comprise a minimum of 18 major credits in a particular language.* The remaining 6 credits may be earned in other designated courses in the Department. A major in *Romance Languages* must comprise courses in both French and Spanish (not including French 1-2 or Spanish 1-2) with a minimum of 12 major credits in each.

The special supervisor for majors in *French* is Professor Clifford S. Parker; for majors in *German*, Professor A. P. Danoff; for majors in *Latin* and in *Romance Languages*, Professor J. S. Walsh; for majors in *Spanish*, Professor R. A. Casas. All offices of the Department of Languages are in Murkland Hall.

Attention is called to the combined major in History and Literature.

Mathematics

Over and above the benefits to be derived from the study of Mathematics for its own interest, it is being recognized, ever more forcefully, that such study will give the student essential and invaluable equipment for any scientific pursuit. The courses in Mathematics are intended to provide a sound preparation in the fundamentals of the subject as well as to offer a sufficient variety of subject matter to meet diversified interests. Courses are designed to prepare the student, who majors in Mathematics, for opportunities in various fields. Among them are (1) work in statistics, such as government agencies, business, life insurance, and the application of statistics to problems in Education, Economics, Sociology, Psychology, Medicine, and Genetics; (2) teaching mathematics in secondary schools; (3) graduate study for those students who are interested and especially proficient in their undergraduate work; (4) many industrial opportunities requiring mathematics for research in applied problems and consulting work.

All students who major in Mathematics must meet in full the requirements of the General Liberal Arts Curriculum as stated on page 90. They must complete at least 24 semester credits in Mathematics, with grades of C or better, including Mathematics 19. Majors in Mathematics, preparing for secondary school teaching, must include Mathematics 9 in their programs. (*Mathematics 2, 9, 11, and 13 do not count for major credit.*) In order to satisfy sooner the prerequisites and to be better prepared for subsequent courses, a student expecting to major in Mathematics should plan, if possible, to complete the courses Mathematics 11, 13, 14, and 16 in the Freshman year.

All students who are interested in a Mathematics major should consult the supervisor, Professor D. B. Ames, Room 203, DeMeritt Hall.

Music

The Department of Music offers a major program in the General Liberal Arts Curriculum for students who desire to place an emphasis on Music while pursuing a broad, general program of study. The study of music history, literature, and appreciation gives the student cultural values which should enrich his entire life. Music study tends to increase understanding and appreciation of other fields, including the Fine Arts, Language, and Literature. Instruction offered in the Department of Music is designed to develop musicality (appreciation and general comprehension of music form), musicianship (musical taste and scholarship), ability to perform, and capacity to teach, supplemented by the general education required by the College of Liberal Arts.

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*The requirements for a major in a single language are effective for students entering the University after September 1, 1949.

Instrumental instruction and vocal instruction are given in private lessons. Class instruction provides for the pursuit of academic music studies. Student recitals, instrumental and vocal ensembles, Men's Glee Club, Women's Glee Club, the University Concert Choir, the University Symphonic Orchestra, and the University Symphonic Band afford both laboratory and concert experience.

Students who major in *Music* are expected to meet in full the requirements of the General Liberal Arts Curriculum, which are set forth on page 90. They must also earn grades of C or better in all courses of the music major. The Department of Music offers the students three options in concentration leading to the Bachelor of Arts Degree with a major in Music. All students must take the basic theory courses, Music 9-10 (*not to be counted for major credit*), 11-12, 13-14, 15-16, and the basic history course, Music 45, 46. The particular requirements of each option are given below:

I. An option stressing Music History: in addition to the above basic courses the following must be taken — 4 credits in advanced theory; 12 credits in advanced history and literature courses, 8 credits in Music 23 (Piano), and/or 26 (Voice).

II. Applied Music option, emphasizing training in voice, piano, organ, violin, woodwinds, and brass (a student majoring in this option must take an examination before the staff of the Department of Music): in addition to the above basic courses the following must be taken — 4 credits in advanced theory or literature courses, 16 credits in Applied Music in principal field (2 credits per semester), a senior recital.

III. A theory option stressing musical composition; in addition to the above basic courses the following must be taken — 12 credits in advanced theory, 4 credits in advanced history, 8 credits in Music 23 (Piano).

Prospective majors in Music are advised to consult with the supervisor, Professor Karl H. Bratton, Room 101, Ballard Hall.

Philosophy

The Department proceeds on the assumption that Philosophy, which has sometimes borne the reproach of being impractical, is in reality very practical and can make its contributions to actual living. It is interested in the diffusion of the philosophic spirit among all students as well as in developing specialists in Philosophy. It proceeds on the belief that Philosophy is (1) an attitude, (2) a method, and (3) a body of knowledge which may greatly aid in the development of wisdom.

Students in any of the following groups may find Philosophy of value. (*At present the department does not offer opportunity for a major.*)

1. Those for whom the greatest intellectual need is to become at home in the whole world of thought through an inclusive investigation of nature and man. Such individuals, equally interested in both the social studies and the humanities, but without a preference for either as a specialty, might find in the breadth and depth of Philosophy the field of partial concentration of greatest value to them.

2. Those whose interest in Philosophy, or in social or humanistic studies, suggests the teaching of Philosophy as a vocation.

3. Those planning to attend theological schools or to specialize in religious education.

Physics

The major in *Physics* is intended to prepare students for a diversity of interests in the application of this fundamental science. Broad in scope, the program provides electives so that a student may supplement his work in Physics by that in other fields such as mathematics and the allied sciences. The intermediate courses are purely theoretical in nature and are intended to give the student a thorough grounding in fundamentals in a particular branch of physics. Some of these courses are supplemented by appropriate laboratory work illustrating some of the basic principles. Opportunity is given in the Senior year for a student to do some elemental investigation of his own choosing under guidance. Graduates of this major are eligible for employment in the various industrial, government, and armed services laboratories or they may continue study in the academic field leading to more advanced degrees.

Students who major in *Physics* are expected to meet in full the requirements of the General Liberal Arts Curriculum which are described on page 90. They are required to complete 24 semester credits, in addition to the introductory courses, with grades of C or better, and *must elect Physics 21-22 as the introductory course in place of Physics 1-2.* Since proper preparation in mathematics is essential to a good understanding of Physics, the student must plan to elect in the Freshman year, if possible, Mathematics 11, 13, 14, 16, in order to have the necessary prerequisites for Physics 21-22 and the courses that follow in both mathematics and physics.

Students who wish to major in *Physics* are advised to consult with the supervisor, Professor F. A. Scott, Room 103, DeMeritt Hall.

Psychology

Some students may wish to major in Psychology for the purposes of understanding themselves and others more adequately and of gaining knowledge of scientific methods of studying human behavior. Others may not have these aims in mind but also may wish to specialize in Psychology to prepare themselves for one of the following professional objectives: (1) college teaching; (2) personnel work in industry or government; (3) supervision of psychological testing in mental hospitals, juvenile courts, city school systems, child guidance clinics, and the Federal Civil Service; (4) counseling and guidance in secondary schools and colleges; (5) clinical practice.

Students who contemplate major work in Psychology as a means of preparing for a profession should keep in mind the necessity of graduate work. For non-majors, a background of Psychology will be an asset in teaching, nursing, social work, business and industrial management, or in professions, such as medicine and law, in which human relations are of primary importance.

Students who major in *Psychology* are expected to meet in full the requirements of the General Liberal Arts Curriculum which are set forth on page 90. They are required to complete 24 semester credits, with grades of C or better, in courses in Psychology and in such related courses as may be approved by the supervisor and the College Dean. Psychology 95, *Advanced General Psychology*, and Psychology 98, *Seminar in Psychology*, are required of all majors. Psychology 57, *Experimental Psychology*, and Psychology 67, *Sta-*

tistics in Psychology, should be taken by all psychology majors who are planning for graduate work. A comprehensive paper on a subject approved by the supervisor is required. This paper is the core project in Psychology 98. Students who wish to major in *Psychology* are advised to consult with the supervisor, Professor Herbert A. Carroll, Room 202F, Conant Hall.

A graduate program of study is offered for those students who are interested in earning the Master of Arts degree in Psychology. (See the catalogue of the Graduate School for further information.)

Sociology

The major in *Sociology* is for (1) students who desire a liberal education with emphasis on study of the organization and differentiation of contemporary society, particularly study of the research methods developed in recent years for a better understanding of social phenomena; (2) students who intend to do graduate work in Sociology; and (3) students who plan to attend a graduate school of social work but prefer a broader choice of undergraduate electives than the prescribed Social Service Curriculum permits.

The Social Service Curriculum, with its supervised field work and its concentration on preprofessional courses, not only prepares students to enter graduate schools of social work but also has been quite successful, for a number of years, in preparing them for junior positions in social work prior to graduate study.

Students who wish to teach Sociology in secondary schools are advised that such teachers usually have to teach related social studies. Students with this vocational aim should consult with Professor T. O. Marshall of the Department of Education.

Majors in *Sociology* are expected to meet all the requirements of the General Liberal Arts Curriculum (page 90). It is recommended that they take Sociology 1, *Principles of Sociology*, and Sociology 4, *Problems of Social Disorganization*, during their Freshman or Sophomore years. In addition, they must complete a minimum of 24 semester credits with grades of C or better in Sociology (or in any related course approved by the supervisor and the College Dean). Sociology 92, *Senior Seminar*, and Sociology 75, *Methods of Social Research*, are required. *Sociology majors must also complete six semester credits of advanced work in one of the following fields: Economics, Government, Home Economics, History, Psychology, or Zoology.* At the end of the Senior year they must pass a written comprehensive examination for which Sociology 92 is designed to prepare them.

Students who are interested in choosing *Sociology* as a major should consult the supervisor, Professor Raymond E. Bassett, Room 206, DeMeritt Hall.

Zoology

Zoology is the science of animal life; the study of the structure, functions, development, and classification of the various animal forms. The student may major in Zoology (1) because of a general educational interest in the subject; (2) because of his avocational interest in nature study; or (3) to prepare for professional work in pure science or in Applied Zoology. Fish and Game Management, important in the conservation of our natural resources, is an example of Applied Zoology. Students who are interested in entering the fields of Applied Zoology should plan to secure advanced degrees since positions in these fields are difficult to obtain without graduate study. Undergraduate preparation for students who are interested in Applied Zoology generally should parallel that of any student planning to enter graduate work in Zoology.

The University of New Hampshire's location on tidewater and near the open ocean provides an unusual opportunity for the study of Marine Zoology and Marine Ecology.

All students who major in Zoology are expected to meet in full the requirements of the General Liberal Arts Curriculum (see page 90) with grades of C or better in 24 semester credits in Zoology. Related courses in other departments may be counted for major credit with the consent of the supervisor and the College Dean. Minimum course requirements for Zoology majors include: Zoology 7-8, Zoology 20 or 59, and Botany 3 or 6; eight of the 24 major credits must be in courses numbered 51-100. *Zoology majors are also required to present credit for Chemistry 3-4 and a course in Organic Chemistry. (Chemistry 45, 51-52, or Agricultural Chemistry 1.) These courses in Chemistry cannot be counted as part of the 24 major credits.*

Students who are interested in a *Zoology* major are advised to consult the supervisor, Professor W. L. Bullock, Room 107A, Nesmith Hall.

OTHER PROGRAMS OF STUDY

Although pursuing his studies in the College of Liberal Arts in one of the major fields just outlined, the student may also prepare himself for some related objective which he may have in mind. Two of these are described below and there is enough freedom of election to make it possible for the student, in consultation with his supervisor, to arrange others.

Pre-Dental

Pre-Dental preparation parallels very closely the Pre-Medical Curriculum, although students may elect almost any one of the General Liberal Arts Majors. The student's program should include courses in Comparative Anatomy, Physics, and Organic Chemistry. Students who plan to enter dental school, either before or after achieving the Bachelor of Arts degree, are advised to consult with Professor W. L. Bullock, Room 107A, Nesmith Hall.

Pre-Law

While the bar association and law schools do not prescribe a specific undergraduate curriculum for future lawyers, they recommend that a student who contemplates entering law school should plan a study program which will develop breadth of view and facility of expression. They also urge him to acquire a background of information concerning the society in which he lives and the forces which have shaped modern institutions.

The courses considered most helpful are those developing oral and written expression; dealing with man's social, economic, and political institutions; providing an understanding of the human mind; and developing the art of thinking. Finally, since the case method of study is used in law schools, courses devoted to the intensive study of the subject matter are considered helpful as an introduction to the materials and the discipline which the student will experience in law school.

A number of law schools require the *Law School Admission Test* of students seeking admission; each law school will advise a student upon request whether or not he will be expected to take the test in partial satisfaction of admission requirements. Particulars on the examination may be obtained at the Government Department office.

Students who plan to enter law school after graduation are advised to counsel with Professor J. T. Holden, Room 204, Morrill Hall, as soon as they have made their decision.

PRESCRIBED CURRICULUMS

Several prescribed programs of study intended to provide preparation for business or professional life are available to students in the College of Liberal Arts. They are arranged in such a manner as to permit considerable specialization while conserving the breadth and general culture of the students enrolled in them. They are less broad and general, however, than the *General Liberal Arts Curriculum.* They are definitely professional in character. All *Prescribed Curriculums* lead to the degree of Bachelor of Science.

Business Curriculum

One curriculum with an option is offered in this field. (1) A curriculum for students who do not desire to specialize in any particular phase of business; (2) an option for those desiring to specialize in accounting. The Business Curriculum provides for general education as well as for professional preparation in business subjects. For students interested in marketing and distribution, in finance, or in labor and personnel administration, a list of courses in these areas is offered. Students may choose electives from these groups. Many of the graduates of the Business Curriculum are successfully filling responsible positions with accounting, banking, insurance, merchandising, and manufacturing concerns.

The Business Curriculum is planned to emphasize foundation or general courses in the Freshman and Sophomore years with specialization coming largely in the Junior and Senior years. The program is outlined on pages 93 and 94. Students registered for this Curriculum are held for the requirements expected of students in all Prescribed Curriculums which are set forth on page 91. Students pursuing the *Business Curriculum* must obtain grades of C or better in 24 semester credits from the following courses: Business Administration 1-2, 21-22, 23, 34; Economics 1-2, 3, 25, 31, 51, 53, 56; and English 35. Of the required courses in Economics and Business Administration, at least 12 semester credits shall be earned at the University of New Hampshire.

Students pursuing the *Accounting* option must obtain grades of C or better in 24 semester credits from the following courses: Business Administration 1-2, 3-4, 7-8, 21-22, 23, 55, 56, 57, 59, 68; Economics 1-2, 3, 25, 31, 53, 56; and English 35. Of the required courses in Economics and Business Administration at least 12 semester credits shall be earned at the University of New Hampshire, at least six of these semester credits shall be in accounting courses.

Students interested in registering for the *Business Curriculum* or the *Accounting Option* should consult the Chairman of the Department, Professor A. W. Johnson, Room 212, Morrill Hall. Those who elect either of the curriculums will be assigned to a member of the department staff who will act as supervisor for the duration of the student's course.

Hotel Administration Curriculum

Young men and women to whom a hotel career makes an appeal are invited to follow this curriculum. The inevitable condition of final success is continuous and arduous application, both mental and physical, to the many tasks actually performed in a hotel operation. We refer to the school of experience during the college period and following graduation, for which there is no substitute. On the other hand, there are many opportunities in the field for persons of earnest intentions. The hotel (and motel) business is an expanding one in which the personal growth toward proprietorship, or a position of responsibility in a chain hotel organization, largely depends on the ability and initiative of the individual.

There is no thought here to train a student for a specific hotel job, rather the curriculum is designed to provide him with some appreciation of the wide variety of subject matter demanded of today's hotel executive. In addition, work in the Humanities, the Social and Physical Sciences, aims to prepare him to take his place in a world in which he will enjoy working and living.

The curriculum is so specialized that three college years are needed to fulfill requirements. *Regular students should enter the curriculum no later than the fall semester of the Sophomore year. Transfer students usually cannot expect to complete requirements in two years.*

The basic work comprises four main divisions: Foods, Engineering, Accounting, and Hotel Management Problems. About three fourths of the total Curriculum is prescribed by the requirements of the Department together with the University and College requirements, leaving about one fourth of the time open for electives in allied subjects or others of the student's choice.

To be graduated from the Hotel Administration curriculum, a student must have completed satisfactorily the requirements of all Prescribed Curriculums as set forth on page 91, the courses as detailed on page 95, and further he must have attained a cumulative grade point average of 2.4 or better in the following courses: Business Administration 9-10; Electrical Engineering 31; Hotel Administration 5, 26; Home Economics 15-16, 46, 49-50; and Mechanical Engineering 40.

To make certain that the hotel education program contains some experience under working conditions, *each student is required to secure before graduation a minimum of 20 points of hotel practice credit in addition to the scholastic requirements of the Curriculum. This will be gained through work in hotels where supervision will be authorized, regular reports submitted by the students, and the grade of work reported by the employer. Each week of work will constitute one point. Not more than 12 points may be secured for any one type of work performed, nor more than 20 points from a given hotel.*

Students interested in *Hotel Administration* are advised to consult the supervisor, Professor R. R. Starke, Room 105, Conant Hall.

Medical Technology Curriculum

There is now a large and increasing demand for Medical Technologists. Public health and medicine depend more and more upon the laboratory. Professional technicians are needed to perform various laboratory techniques and tests, such as blood typing, blood counts, tissue sections, urinalyses, and bacteriological and serological tests. Positions in this field are available in hospital laboratories, physicians' and surgeons' clinics, and in health department laboratories.

Students who are interested in becoming Medical Technologists should register in the prescribed curriculum in *Medical Technology.* In this program, students will take their Freshman, Sophomore and Junior years' work at the University and their last year's work at the Mary Hitchcock Memorial Hospital School of Medical Technology, Hanover, New Hampshire. After satisfactorily completing the courses at the School of Medical Technology (Biology 61-62), the student is awarded 32 credits toward the Bachelor of Science degree. This program also qualifies the student for the examination for the Medical Technologist's certificate administered by the Registry of Medical Technologists of the American Society of Clinical Pathologists. Thus a student can obtain the B.S. degree from the University and the M.T. certificate in a four-year period. Students who complete this curriculum are well qualified for work in any hospital or medical laboratory (See page 96.)

Students in the Medical Technology Curriculum must obtain grades of C or better in 24 semester credits from the following courses: Zoology 17, 20; Bacteriology 1, 8, 53; Chemistry 17, 45; and Agricultural Chemistry 56.

Students who in their Junior year decide not to take the training program at the Mary Hitchcock Memorial Hospital School of Medical Technology will find it possible to transfer to a major in the General Liberal Arts Curriculum, such as Bacteriology or some other biological science. In such case, they would have to satisfy a language requirement which may be met by passing a reading test based on two years of language taken in high school or one year of college language.

Students interested in the Prescribed Curriculum in *Medical Technology* are advised to consult with the supervisor, Professor L. W. Slanetz, Room 215, Nesmith Hall.

Nursing Curriculum

Any student who is interested in nursing as a career is encouraged to consider the Nursing Curriculum. It affords opportunity for examinations for registration as a nurse and enables the matriculant also to secure a college degree. The breadth of training beyond that usually received in a hospital training school is increasingly in demand, particularly for those who aspire to executive or supervisory positions. The Curriculum prepares for nursing and also permits the student some specialization in other fields related to nursing. (See page 97.)

The student must satisfactorily complete three years of work in residence at the University of New Hampshire, and graduate from a school of nursing approved by the University. The length of the training period will vary with the several schools of nursing.

A student registered in the Curriculum is held for the requirements expected of students in all Prescribed Curriculums which are set forth on page 91. *This Curriculum is intended to precede hospital training.*

Students interested in selecting the *Nursing Curriculum* are advised to consult with the supervisor, Professor E. T. Richardson, Room 104, Nesmith Hall.

Occupational Therapy Curriculum

An ally to the medical profession, Occupational Therapy is any activity, mental or physical, prescribed by a physician and administered by a registered therapist to aid in the recovery or the rehabilitation of the patient.

The successful practice of Occupational Therapy requires not only thorough academic preparation but also suitable personality combined with judgment, dependability, tact, tolerance, patience, and will to serve. A high degree of mental and physical health is essential. Occupational Therapy requires physical vitality and emotional stability.

The course admits both men and women who can meet entrance requirements.

Before the beginning of the Sophomore year, in the case of students who are interested in the Occupational Therapy curriculum (or before admission into this Curriculum in the case of students who transfer from other majors or from other colleges), a series of tests will be given to assist the supervisor in advising the student of his or her fitness for continuing in or entering this Curriculum. (See page 98.)

Because of the highly specialized nature of the Occupational Therapy Curriculum students are advised to enter this program not later than the beginning of their Sophomore year; otherwise, they should expect to spend additional time in working toward the Bachelor of Science degree.

The Curriculum in Occupational Therapy is designed to satisfy the requirements of the American Medical Association as well as to offer a four-year course leading to the Bachelor of Science degree. This includes the theoretical subjects needed in the medical fields as well as a wide range of crafts and skills used in therapy and recreational, educational, and pre-professional subjects.

It is recommended that each student interested in the Occupational Therapy Curriculum spend one summer in an occupational therapy department in either a hospital or a crippled children's camp. This should be done before the student enters the clinical affiliation program.

At the completion of the requirements of the Curriculum, the student will spend a minimum of ten months in clinical practice in affiliated hospitals or services under the direction of a registered Occupational Therapist. *When this internship is satisfactorily completed, the student is entitled to a Certificate of Occupational Therapy.* The student is then qualified to take examination for registry in the American Occupational Therapy Association. The standard examination is sent out by the Association and administered by the University. A fee of $10 is required by the Association for each examination. While the present demand for qualified therapists is far in excess of the supply, there are relatively few job opportunities for those who have not completed the requirements for and entered the Registry of the American Occupational Therapy Association.

A clinical practice fee of $60 for residents of New Hampshire and $135 for non-residents of the State is payable to the University by those students who enter the clinical practice program.

Ten months of clinical practice in affiliated hospitals is divided as follows:

Psychiatric conditions — three months
Physical disabilities (surgical, neuromuscular and orthopedic) — two months
Tuberculosis — two months
Pediatrics — one month
General medicine and surgery — one month
One month of additional work in one of the above fields as arranged by the student and the supervisor.

The American Medical Association requires a physical examination including a tuberculin test prior to hospital affiliation.

Expenses vary during the period of clinical practice. Room, board, and laundry are given students by some hospitals; meals only in other hospitals; while some offer affiliations only. *In all cases, the University must approve living arrangements for student affiliates.* Students will furnish regulation uniforms which are required for clinical practice.

Students who are registered in the Curriculum are held for the requirements expected of students in all Prescribed Curriculums which are set forth on page 91, and in addition must obtain grades of C or better in the following courses: Zoology 17, 19, 20, 64; Occupational Therapy 41, 44, 46, 49-50. Students interested in the Curriculum are advised to consult with the supervisor, Professor Esther Drew, Room 216, Hewitt Hall.

Pre-Medical Curriculum

Young men and women who are interested in careers as physicians or surgeons may select the Pre-Medical Curriculum. Students who successfully complete this Curriculum will be eligible for admission to class A medical schools. However, owing to the large number of applicants for admission to medical schools, usually only those students who stand in the upper third of their class can expect to be admitted.

It is highly desirable that a pre-medical student secure a Bachelor's degree, although some medical schools do not require it as a condition of admission. The four years of pre-medical work will not only give the student a foundation for his future medical training, but will also give him an opportunity to secure the broad general education he needs. Medical schools recognize this need for general education and recommend that pre-medical students secure only basic sciences and devote the rest of their time to non-science areas.

The Curriculum is outlined in detail on page 99. Students registered in it are held for the general requirements of Prescribed Curriculums (see page 91). The following courses, which are required or recommended by certain medical schools, are available as electives: Chemistry 27, *Introductory Quantitative Analysis* (1st semester, Senior); Chemistry 82, *Introductory Physical Chemistry* (2nd semester, Senior); Physics 43-44, *Intermediate Laboratory* (Junior); Zoology 65, *Embryology* (2nd semester, Junior). They can be scheduled in the semester indicated. *Students pursuing the Pre-Medical Curriculum must obtain a grade point average of 2.5 or better for the required courses in Biology, Chemistry, Physics, and Zoology.*

Students who are interested in this Curriculum should consult the supervisor, Professor George M. Moore, Room 101, Nesmith Hall.

Secretarial Curriculum

A large number of college women find pleasant and profitable employment in secretarial positions in private, professional, commercial, and industrial offices. Although in most cases the initial appointment is to a subordinate position in an office organization, the breadth of the college education plus the secretarial skills acquired during the college course give opportunity for early assumption of greater responsibility.

Although the Curriculum is essentially semi-professional, it provides for a rather liberal number of electives with which to secure the general education so essential to success.

Women students who are interested in other aspects of business are advised to consider the Business Curriculum and those interested in less specialization are counseled to consider a major in Economics in the General Liberal Arts Curriculum.

Women who are preparing to teach commercial subjects in high school should consult the description of the Commercial Teacher Preparation program which appears on page 84.

The Secretarial Curriculum is outlined in detail on page 100. Students registered in it are held for the general requirements expected of students in all Prescribed Curriculums as set forth on page 91. Secretarial students must earn grades of C or better in the following courses: Secretarial Studies 3-4, 9-10, 17; Secretarial Studies 11, 13, 18 (unless excused in accordance with the statement below). In addition, secretarial students must earn a C grade in 4-11 credits (to make a total of 24 semester credits) of work in the following courses: Secretarial Studies 22, *Advanced Transcription;* Secretarial Studies 23-24, *Business Writing;* Economics 3, *Economic and Commercial Development of the U.S.;* Business Administration 1-2, *Elementary Accounting;* Business Administration 21-22, *Commercial Law;* or Business Administration 24, *Introduction to Business.*

Students transferring from collegiate institutions and high-school students with previous training in Secretarial subjects are required to take the following courses: Secretarial Studies 3-4, 9-10, 17; Secretarial Studies 11, 13, 18 (unless excused). These students may be excused from:

Secretarial Studies 11 by passing a 40-period certificate test.

Secretarial Studies 13 by passing a theory and practice test on each of the machines taught.

Secretarial Studies 18 by giving satisfactory evidence of having done acceptable secretarial work in a business office for one year. "One year" shall be interpreted as not less than 50 weeks of full-time work. Full-time work done continuously for two weeks or more may be counted toward a year's work. Part-time work of less than 30 hours a week may not be considered. Only part-time work of 30 hours a week or more done continuously for at least 6 weeks may be counted toward a year's full-time work. The number of hours of acceptable part-time work will be divided by 40 to find the equivalent number of weeks of full-time work. (*Work done for relatives will not be considered.*)

Tranfers and high school students who have had one year of Gregg shorthand (or the equivalent of one year) in another institution and have earned a grade of 80 or better (where the passing grade is 70) will not be allowed to enroll in Secretarial Studies 1 for credit; likewise, those students who have had one year of typewriting (or the equivalent) in another institution and have earned a grade of 80 or better (where the passing grade is 70) will not be allowed to enroll in Secretarial Studies 7 for credits (see below).

Secretarial students who have had Secretarial Studies 5 in the University of New Hampshire or a similar course in another collegiate institution, or one semester of typewriting in high school or preparatory school, will be required to enter Secretarial Studies 27 instead of Secretarial Studies 7

Students interested in registering for the *Secretarial Curriculum* should consult Professor Doris E. Tyrrell, Room 4, Morrill Hall.

Social Service Curriculum

Social Service includes, among others, the following fields: family case work, child care, child placement, settlement and neighborhood house, institutional work for defectives and dependents, municipal and county relief work, probation, correctional school and prison service, Y.M.C.A. and Y.W.C.A. secretarial service, municipal playground direction, child guidance clinics, community chest work, rural community organization.

For full recognition in most of the fields of Social Service, it is becoming increasingly important for a man or woman to have completed the two-year professional course in a graduate school of social work. The best preparation for admission to such a graduate school is either (1) a broad liberal arts education with 40 to 60 hours of credit in the social sciences, including a major in Sociology, or (2) the Social Service Curriculum. For able students, scholarship aid toward meeting expenses of graduate study is sometimes available.

There is a continuing serious shortage of qualified workers in nearly all the branches of social work. For this reason, a number of students who complete the Social Service Curriculum find employment each year, in public welfare, group work, etc., before they commit themselves to graduate study. The Social Service Curriculum is almost unique among undergraduate pre-professional offerings of its kind in the opportunities it provides for field work. And so its graduates, who have entered employment directly after graduation, have an exceptionally fine record of success.

The program is outlined in detail on page 101. Students registered in it are held to the general requirements of all prescribed curriculums which are set forth on page 91, and in addition must obtain a grade of C or better in 24 semester hour credits from the following courses: Sociology 43, 44, 71, 72, 73, 74, 75, 95, 96, and 97.

It should be noted that while the field work requirements of Sociology 97 may be completed during the college year in connection with a neighboring social agency (see course description) it is strongly recommended that, where possible, students arrange to satisfy the requirement by spending the summer preceding the Senior year in practical work under the supervision of a settlement, correctional institution, or case work agency in Boston, or some other urban center.

Students interested are advised to consult the supervisor, Professor A. M. Nielson, Room 204G, DeMeritt Hall.

PREPARATION FOR TEACHING

UNIVERSITY TEACHER PREPARATION CURRICULUMS

The University of New Hampshire has accepted the responsibility of preparing teachers for the secondary schools of New Hampshire and neighboring states. Two types of teacher preparation programs are offered. General Liberal Arts Curriculum students may follow an advisory program of studies called the university teacher preparation program. There are also *Prescribed Curriculums* preparing teachers in the fields of Agriculture, Art, Home Economics, Music, and Physical Education. (See following pages.) Students interested in preparing for teaching are urged to become thoroughly familiar with the requirements of all the Teacher Preparation Programs before they make a choice of a particular program. *This section of the Catalogue includes descriptions of Teacher Preparation Programs offered by the University, not merely those offered by Departments in the College of Liberal Arts.*

Courses in Problems in the Teaching of High-School Subjects

The courses in problems in the teaching of high-school subjects are listed on page 150 and are open only to students who have completed the course in *Secondary School Teaching* (Education 58) in addition to the courses in the subject and related subjects designated as prerequisites.* From these courses in Problems in the Teaching of High-School Subjects the student who plans to complete the University Teacher Preparation Curriculum selects his course in the field of his teaching major. *To be eligible for Supervised Teaching in a subject, the student must complete the course in the problems of teaching that subject with a grade of at least C.*

Courses in Supervised Teaching

The work in Supervised Teaching is under the direction of the Co-ordinator of Student Teaching. Students teach under the immediate direction of selected classroom teachers in high schools approved by the University.

In the Supervised Teaching courses the student participates in the conduct of class exercises and in the control of the classroom, at first chiefly as an observer, but gradually entering into teacher responsibilities until complete charge of the classroom is assumed.

This work is required in the university teacher preparation programs, but will be open only to students whose applications are approved by the Chairman of the Department of Education and the Co-ordinator of Student Teaching in the subject or subjects in which the applicant desires to do supervised teaching. *Applications should be filed in the Office of the Department of Education on or before November 15 of the academic year in which the supervised teaching is to be done. No application will be considered unless the applicant has completed with a grade of at least C the following courses in Education: 41, 42, 52, 58, and has superior grades in at least 18 semester credits in the subject-matter field in which he desires to teach under supervision.*

The applicant must also complete with a grade of at least C a course in the problems of teaching the subject in which he desires to do supervised teaching.

PRESCRIBED CURRICULUMS IN TEACHER PREPARATION

Agriculture Teacher Preparation Curriculum

A student electing the Teacher Preparation Curriculum in Agriculture must meet the general and specific requirements for a degree described on pages 33 and 34 applicable to all students registered in the College of Agriculture. His course of study will follow a broad general program rather than a specialization in any particular field. Furthermore, he must meet the State Requirements for Certification which include one semester of practice teaching, 8 additional credits of courses in Education, and 8 credits of Agricultural Engineering.

There is a rapidly increasing demand for teachers of Agriculture in our secondary schools. Local school boards are beginning to appreciate more fully the value of instruction in Agriculture, both for the boys who will engage in agriculture after leaving high school, and as electives to maintain the interest of those young men who may wish to take at the University further education in this basic industry. As a result, there are a good many positions open for young men who wish to make the teaching of Agriculture their profession.

For the suggested program for the Sophomore, Junior, and Senior years, see page 47.

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*Except for Ag.-Ed. 92, H.E.-Ed. 91, and P.E.-Ed. 91.

Art Education Curriculum

This curriculum is designed to prepare teachers and supervisors of art in the public schools. It is based upon the new demands for teachers who possess developed skills in the arts and a broad general culture in addition to a specialized preparation in Art Education. The satisfactory completion of the curriculum will satisfy the initial certification requirements for teachers of art in the public schools in New Hampshire and in other states maintaining certification requirements.

Freshmen who plan to enter this Curriculum should elect *Basic Design* and *Drawing and Design* (Arts 23-24) in their first-year program.

A grade of C or better must be achieved in all Arts courses required in the curriculum.

Students who wish to prepare themselves to teach other subjects in addition to Art can do so by using their elective hours for this purpose. Such a program should be worked out in consultation with Professor T. O. Marshall, of the Department of Education.

Students registered in the Curriculum (see page 102) are held for the general requirements expected of students in all Prescribed Curriculums which are set forth on page 91.

Interested students should consult the supervisor, Professor George R. Thomas, Room 218, Hewitt Hall.

Commercial Teacher Preparation Program

This program is an option in the Prescribed Secretarial Curriculum and is not a prescribed curriculum in itself.

Students preparing to teach commercial subjects in high school should include in their Freshman programs Secretarial Studies 7-8 and electives from Group III; in their Sophomore programs, Secretarial Studies 1-2, Business Administration 1-2, and 24, Economics 3, Education 41, 42, and an elective from Group I; in their Junior programs, Secretarial Studies 3-4, 9-10, 13, and 23-24, Business Administration 21-22, and Education 52, and 58; in the Summer Session between their Junior and Senior years, Commercial Subjects-Education 91, *Problems in the Teaching of Commercial Subjects in the High School.* Such students should enroll for 18 semester credits in at least one semester in order to have the second semester of the Senior Year free for supervised teaching.

Interested students should consult the supervisor, Professor Doris E. Tyrrell, Room 4, Morrill Hall.

Home Economics Teacher Preparation Curriculum

This curriculum is designed to prepare teachers of Home Economics for the secondary education program. See page 56 or the program outlined for Teacher Preparation in Home Economics. Satisfactory completion of this curriculum will meet the certification requirements for teachers of Home Economics in the public schools in New Hampshire and other states having certification requirements.

The Curriculum is outlined in detail on page 56. Students who are interested should consult the supervisor, Professor Anna M. Light, Room 209, Pettee Hall.

Music Education Curriculum

This Curriculum is designed to prepare teachers of music for the public schools. It is based on the new demands for teachers possessing sound musicianship and a broad general culture in addition to a specialized preparation in Music Education. This Curriculum satisfies the initial certificate requirements for teachers of music in the public schools in New Hampshire and in most other states.

To be admitted to this Curriculum the student must give evidence of having a sound musical background. *Freshmen who plan to enter this Curriculum must elect Music 9-10 and four hours of Applied Music in their first-year programs.*

A grade of C or better must be achieved in all Music courses required in the Curriculum.

Public-school music teachers must maintain a satisfactory standing musically with other professional musicians in the community and should be able to play or sing acceptably. For this reason *16 semester credits in Applied Music are required before graduation*: 8 semester credits may be taken in one field, and 8 semester credits should be divided among other fields of Applied Music. In addition, all candidates must pass an examination in piano and voice which will demonstrate ability to perform acceptably:

Piano

1. Four-octave major and minor scales.
2. Two of the two-part Bach Inventions or their equivalent in difficulty to be drawn from the classic repertoire.
3. Play from memory any piece of moderate difficulty.
4. Read from sight simple accompaniments and four-part harmony.

Voice

1. Sing from memory two songs of moderate difficulty.
2. Sing creditably from sight a simple song.
3. Sing acceptably from sight any voice part of a choral composition.

Other Instruments

Music Education students must attain a minimum designated proficiency in one instrument from each of the following groups: brass, woodwind, string, and percussion. These various requirements may be removed by special examination if the student is sponsored by the instructor in the field in which the examination is to be undertaken.*

Recitals

Students enrolled in the Music-Education Curriculum must accumulate a minimum of 24 points in the Sophomore, Junior, and Senior years. Attendance at each concert or recital constitutes one point.

All Music-Education candidates must take a voice and piano audition at the end of the Junior Year, and an oral comprehensive examination covering all fields of music preparation before entering upon practice teaching.

The Curriculum is outlined in detail on page 103. Students who are interested should consult the supervisor, Professor D. M. Smith, Room 201, Ballard Hall.

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*By permission of the instructor a student with less than the eight hours of required study may request faculty examination to satisfy a major instrument requirement.

Physical Education Teacher Preparation Curriculum (Men)

For men students who plan to prepare themselves for positions as teachers of Physical Education or Directors of Physical Education, the University has organized the Physical Education Teacher Preparation Curriculum for Men (see page 105). This Curriculum will enable men to prepare themselves to teach in two subject-matter fields as well as in Physical Education. *It is open to men who have satisfactorily completed the Freshman year, and are approved by the Department of Physical Education for admission to Physical Education as a field of concentration.* A grade of C or better must be achieved in Physical Education 23, *Principles of Physical Education;* Physical Education 61, *Problems of Teaching in Physical Education;* Physical Education 65, *Administration of Physical Education in Secondary Schools;* and in 24 semester credits in the second teaching major.

This Curriculum requires the satisfactory completion of a second teaching major of 24 semester credits and a teaching minor of 12 semester credits in subjects taught in high schools. Students who are interested in this program should consult with the supervisor, Professor Carl Lundholm, Room 5A, Field House.

Physical Education Teacher Preparation Curriculum (Women)

For women students who plan to prepare themselves for positions as teachers of Physical Education or for positions in Recreation, the University has organized the Physical Education Teacher Preparation Curriculum for Women. (See page 107). This Curriculum will enable women to elect, at the end of the Sophomore Year, the *Physical Education Option* or the *Recreation Option.* Furthermore, students have the opportunity, if they so desire, to prepare themselves to teach in a subject-matter field as well as in Physical Education. Finally, those interested in going into *Physical Therapy* after leaving the University, may, by petition, make approved substitutions in the program. *The Curriculum is open to women who have satisfactorily completed the Freshman year and are approved by the Department of Physical Education for Women for admission to that field of concentration.* It provides an opportunity to teach Physical Education and assist in recreation programs under supervision in nearby schools and recreation centers.

Students in this curriculum who are planning to teach in areas in addition to Physical Education are required to complete with an average grade of C or better a second teaching major of 18 semester credits in subjects taught in high schools.

For students choosing the *Physical Education Option,* the following courses offered by other departments are suggested as valuable electives: English 35, *Public Speaking;* Psychology 51, *Psychology of Childhood;* Psychology 47, *Mental Hygiene;* Music 33-34, *Appreciation of Music;* Sociology 1, 4, *Principles of Sociology,* and *Problems of Social Disorganization;* Sociology 43, *Urban Sociology;* Physical Education 24, *Organized Camping,* is also recommended. Students in this curriculum are advised to choose non-professional electives whenever possible. Those planning to enter graduate study should elect a foreign language. *In the Physical Education Option a grade of C or better must be achieved in 24 semester credits of the Physical Education courses required in the Curriculum.*

Students choosing the Recreation Option are advised to become skilled in at least two of these five fields: art, drama, music, outdoor education, or physical education. The following courses offered by other departments are suggested as valuable electives for recreation specialists: Arts; Business Administration 23, *Business Communication;* Music Education 91, *Problems in the Teaching of Elementary School Music;* English 35, *Public Speaking;* Forestry 37, *Forest Recreation;* Government 2, *Problems of American Government;* Home Economics 83, *Home and Family Living;* Philosophy 4, *Ethics;* Horticulture 27, *Landscaping the Home Grounds;* Physical Education 63, 64, *Theory of Team Sports;* Psychology 47, *Mental Hygiene;* Psychology 63, *Differential Psychology;* Sociology 33, *Cultural Anthropology and Ethnology.*

Recreation students interested in Forestry Recreation are advised to take Forestry 61, 62, *Problems,* and Forestry 37, *Forest Recreation* (Woodcraft and Nature Studies).

To make certain that the Recreation Option contains some experience under working conditions, *each student is required to secure before graduation a minimum of 8 points of community recreation or camping credit in addition to the scholastic requirements of the Curriculum. This will be gained through work in hotels, playgrounds, community centers, or camps where supervision will be authorized, two reports submitted by the student, and the grade of work reported by the employer. Each week of work will constitute one point.*

The students in the Recreation Option must complete, with a grade of C or better, 24 semester credits of the Physical Education, Art, Music, and Drama courses offered in the Curriculum.

Under Physical Education 1, 11, 2, 12, 3, 4, 5, 6, Physical Education students are required to include certain activities in the section reserved for students in the P.E.T.P. Curriculum. *During the Freshman (or Sophomore) year* the student must register for one quarter each of the following in the order listed: hockey, tennis, basketball, badminton, skiing, volleyball, softball, and archery; *in the Sophomore year,* tennis (intermediate), elementary games, recreation workshop, and golf; *in the Junior year,* stunts and tumbling, country dance, modern dance (elementary), modern dance (intermediate). *Students in the Recreation Option, in addition, must take individuals or gymnastics.*

For those who are quite highly skilled in the activities mentioned, substitutions may be made with the approval of the supervisor. Further dance and other activities not listed are included in courses for students in the Prescribed Curriculums.

Students who are following any Teacher Preparation Curriculum in the University are urged to include, for Physical Education, American country dancing, folk dancing, social recreation, hockey, basketball, and softball.

For information concerning this Curriculum consult with the supervisor, Professor Marion Beckwith, 101A, New Hampshire Hall.

Guidance of Students Preparing to Teach

Students who come to the University of New Hampshire for the purpose of preparing themselves for the teaching profession should consult with the Chairman of the Department of Education early in their Freshman year. Other students who are seriously considering teaching as a possible profession are urged to consult with the Chairman of the Department of Education before making a decision.

While the University has organized curriculums designed to prepare students for the profession of teaching, it also recognizes that it is important that students be prepared to meet the teacher certification requirements of the states in which they may desire to teach. The Department of Education endeavors to keep its files of teacher certification requirements up to date. Students preparing to teach in states other than New Hampshire should, before the close of their Sophomore year, consult the Department of Education concerning the requirements of the states in which they desire to teach and the most effective ways of meeting those requirements.*

A PLAN FOR INDEPENDENT STUDY

In order to stimulate the superior student and to develop his initiative, the Faculty of the College has approved a plan for independent study which will permit Seniors who have demonstrated superior ability to take a special program replacing in part courses usually taken in the Senior year. Independent study enables a student *to pursue intensive work in a limited field of study or to integrate the subject matter of two or more fields.*

(1) A Senior in the College of Liberal Arts may register for not less than 6 or more than a total of 12 semester credits of *Independent Study* for the year, provided: (a) his cumulative academic average at the end of his Junior year is 3.0 or better, and (b) he has submitted a plan for Independent Study that has been approved by his Supervisor and the Dean.

(2) *This student shall be called a College Scholar.*

(3) A College Scholar who registers for Independent Study may not carry more than 18 semester credits per semester and is not relieved of any University, College, or Prescribed Curriculum requirements. Independent Study credits may at the discretion of the Supervisor be submitted in whole or in part for major course requirements in the *General Liberal Arts Curriculum* or for elective credits in a *Prescribed Curriculum.*

(4) A College Scholar who has registered for Independent Study will be assigned for guidance to a member of the staff of his major department or Prescribed Curriculum.

(5) A College Scholar pursuing Independent Study may either (a) work upon a project involving individual work, such as a long essay, a series of experiments, gathering and interpretation of data, creative writing, etc., or (b) prepare for a special comprehensive examination. (*Such special comprehensive examination or paper may not be substituted for a required departmental comprehensive examination or paper.)*

(6) The result of a College Scholar's activity under the program of Independent Study will be judged by three members of the Faculty, appointed by his Supervisor from the staff of his department or curriculum or from related departments or curriculums or from both. (See page 182 for registration.)

REQUIREMENTS FOR DEGREES

The degree of *Bachelor of Science* is conferred upon those students in the College of Liberal Arts who successfully complete the requirements of a *Prescribed Curriculum.* The degree of *Bachelor of Arts* is conferred upon all students in the College of Liberal Arts who successfully complete the requirements of the *General Liberal Arts Curriculum.*

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*The requirements of the State of New Hampshire are 21 semester credits in education courses, including 6 semester credits in supervised student teaching, and 18 semester credits in one or more fields usually taught in secondary schools. For detailed information concerning requirements, consult the Department of Education, Room 3, Murkland Hall.

A student's candidacy for a degree will be determined by his satisfaction of the university, college, major, or curriculum requirements in force at the time of his admission to the college as either a beginning student or a transfer. A student may petition to satisfy the university, college, major, or curriculum requirements that may be in force at any time during his residence. Such a student shall be held, however, for *all* the academic requirements of the Catalogue under which he seeks a degree; not a portion thereof. *The new Catalogue becomes effective on July 1 of each year.*

Each candidate for a degree in the College of Liberal Arts must complete successfully 128 semester credits, and achieve a 1.8 *grade point average* in all courses completed in the University. In addition, he must complete the requirements given below and those of the major field, or prescribed curriculum, as stated in the preceding pages. **Each student shall submit an application for a degree, bearing the signature of his supervisor and the college dean, 12 months prior to the expected date of graduation.**

A. General University Requirements

Physical Education for Men	Freshman Year
Physical Education for Women	Freshman, Sophomore, and Junior Years
R.O.T.C. for Men	Freshman and Sophomore Years

B. General College Requirements

1. SPECIAL FRESHMAN REQUIREMENTS
   *a. English 1-2, *Freshman English*
   *b. A biological science (Biology 1-2) or a physical science (Chemistry 1-2; or 3-4†; Geology 1-2; Mathematics 2, 13; or 11, 13; Physical Science 1-2; Physics 1-2‡)
2. SPECIAL HISTORY REQUIREMENTS (to be taken in the Freshman year unless the curriculum lists it in the Sophomore year)
   *History 1, 2, *Introduction to Contemporary Civilization*
3. All Freshmen in the College of Liberal Arts are assigned on registration to advisers who counsel them until they have officially selected major departments or prescribed curriculums. Official declaration of a major or a prescribed curriculum is accomplished by a special form which must bear both the adviser's and the supervisor's signatures.
4. Students in both the *General Liberal Arts Curriculum* and *Prescribed Curriculums* are advised against over-specialization. Although no attempt is made to limit by regulation the number of courses in a major or the professional courses in a Prescribed Curriculum, more than 36 semester credits in courses in the major department, or more than 66 semester credits in professional courses in a Prescribed Curriculum, are deemed to constitute excessive concentration. Supervisors will counsel students who seem to be concentrating to their detriment to elect

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*Not counted toward fulfillment of *Major* or *Group* requirements.

†Chemistry 3-4 is required for pre-medical students and all who intend to take advanced work in chemistry.

‡Students who expect to major in physics should not register for Physics 1-2 but elect sufficient mathematics to be able to schedule Mathematics 17-18 and Physics 21-22 in the Sophomore year.

courses more likely to contribute to the breadth of their education. The Dean of the College will consult with the supervisors with regard to over-specialization as it may appear in the programs of individual students.

5. Students are advised that a limited amount of credit earned in music organizations may be counted toward a degree. See Music Organizations, page 187

C. General Liberal Arts Curriculum Requirements

Each candidate for a degree in the *General Liberal Arts Curriculum* must satisfy (1) the General University Requirements, (2) the General College Requirements as stated above, and (3) in addition must complete the requirements listed below and those of the major as described in preceding pages.

1. SPECIAL LANGUAGE REQUIREMENT

All students pursuing the General Liberal Arts Curriculum are required to pass a reading test in Classical Greek, French, German, Italian, Latin, or Spanish before graduation. This test* will be based on two years of secondary-school language training. Graduates of normal schools or teachers colleges who are pursuing the General Liberal Arts Curriculum to qualify for a degree in the field of elementary education are exempt from the language requirement.

2. GROUP REQUIREMENTS

A student whose major is included in Groups I, II, or III shall present for the satisfaction of that group requirement some course outside of his major field, one not offered in fulfillment of any other college requirement. *A student may not offer in fulfillment of the Group I requirement the elementary course in the language in which he satisfies the special language requirement.*

I. A student must succesfully complete a year's work (two sequential semesters) in this group.
   a. Arts 31, 32
   b. English 13, 14, or 15, 16
   c. Humanities 1-2
   d. Languages
   e. Music 33-34
   f. Philosophy

II. A student must successfully complete a year's work (two sequential semesters) in this group (students electing a biological science during their Freshman year must elect a physical science during their Sophomore year, or *vice versa*):
   a. Biological Science (Biology 1-2)
   b. Physical Science (Chemistry 1-2; or 3-4; Geology 1-2; Mathematics 2, 13; or 11, 13; Physical Science 1-2; Physics 1-2 or 21-22)

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*Language Reading Tests will be given three times a year; during Orientation Week and before the examination periods in January and May. To take a Reading Test a student (except entering Freshmen and transfer students in Orientation Week) must make a written application. Forms are available in the office of the Department of Languages, Murkland 118.

III. A student must successfully complete at least 6 semester credits of course work in this group.
   - a. Economics
   - b. Government
   - c. Psychology
   - d. Sociology

3. DIVISIONAL REQUIREMENTS
   The student must meet such divisional requirements as may be established in the division in which he is majoring.

4. MAJOR REQUIREMENTS
   Each student pursuing the *General Liberal Arts Curriculum* may select at the end of the second semester of the Freshman year, and shall select not later than the end of the second semester of the Sophomore year, a major department in which he shall pass courses to a total of 24 semester credits with grades of C or better. Courses in other departments closely related to the major courses may be counted with the consent of the major supervisor and the College Dean. Departments shall designate in the Catalogue in their description of courses those which will not count for major credit. In addition to satisfactorily completing (1) 24 semester credits in the major field and (2) the divisional requirements, each student, at the discretion of his major department, may be required to:

   a. Pass a comprehensive examination in his major field

   or

   b. Prepare a satisfactory paper on a subject approved by his supervisor, in the student's field of concentration.

D. Prescribed Curriculum Requirements

1. A student registered in a Prescribed Curriculum must satisfy the General University Requirements and the General College Requirement described in previous pages.
2. *Inasmuch as all Prescribed Curriculums are intended to furnish professional or semi-professional preparation, students selecting them are held for the successful completion of all the courses prescribed and generally in the sequence in which they are arranged in the Curriculum.*
3. A student pursuing a Prescribed Curriculum must meet the quality requirements established for that Curriculum. (See descriptions of the curriculums on preceding pages.)

GENERAL LIBERAL ARTS CURRICULUM

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
R.O.T.C.	1½	1½
P. E. 1, 2 (*For Women*)	1	1
P. E. 31, 32 (*For Men*)	½	½
Hist. 1, 2, *Introduction to Contemporary Civilization*	3	3
†A Biological Science (*Biol. 1-2*) or a Physical Science (*Chem. 1-2; Chem. 3-4‡; Geol. 1-2; Math. 2, 13; Math. 11, 13; Phy. Sc. 1-2;* or *Phys. 1-2*§)	3 or 4	3 or 4
Engl. 1-2, *Freshman English*	3	3
‖Electives to meet semester requirements		
	16	16

SOPHOMORE YEAR		
R.O.T.C.	1½	1½
P. E. 3, 4 (*For Women*)	1	1
Elect one year's work from each of the three following groups (see group requirements, page 90):		
Group I. Arts 31, 32; English 13, 14; or 15, 16; Humanities 1-2; Languages: Music 33-34; Philosophy	2 or 3	2 or 3
Group II. †A Biological Science (*Biol. 1-2*) or a Physical Science (*Chem. 1-2; Chem. 3-4‡; Geol. 1-2; Math. 2, 13;* or *11, 13; Phy. Sc. 1-2; Phys. 1-2;* or *21-22*)	3, 4, or 6	3, 4, or 6
Group III. Economics, Government, Psychology, Sociology	3	3
Electives to meet semester requirements		
	16	16

JUNIOR YEAR		
P. E. 5, 6 (*For Women*)	1	1
Major courses and electives to meet semester requirements.		
	16	16

SENIOR YEAR		
Major courses and electives to meet semester requirements.		
	16	16

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†Students electing a Biological Science during their Freshman year must elect a Physical Science during their Sophomore year, or *vice versa*.

‡Chemistry 3-4 is required for pre-medical students and all who intend to take advanced work in chemistry.

§Students who expect to major in physics should not register for Physics 1-2 but should elect sufficient mathematics to be able to schedule Mathematics 17-18 and Physics 21-22 in the Sophomore year.

‖See Special Language Requirement, page 90.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 90.

BUSINESS CURRICULUM

Freshman Year	First Semester Credits	Second Semester Credits
*See Freshman requirements, page 89.		
B. A. 1-2, *Elementary Accounting*	4	4

Sophomore Year

R.O.T.C.	1½	1½
P. E. 3, 4 (*For Women*)	1	1
†B. A. 24, *Introduction to Business*		3
Econ. 1-2, *Principles of Economics*	3	3
Econ. 3, *Economic and Commercial Development of U. S.*	3	
Elective from Group I	2 or 3	2 or 3
Elective from Group III	3	3
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English 13, 14; or 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

Group III. — Six semester credits from Government; History; Psychology; Sociology.

Junior Year

P. E. 5, 6 (*For Women*)	1	1
B. A. 21-22, *Commercial Law*	3	3
B. A. 23, *Business Communications*	3	
Econ. 25, *Marketing*	3	
Econ. 51, *Labor Economics*	3	
Electives from Economics and Business Administration	3	3
Engl. (35), *Public Speaking*		3
Electives		
	16	16

Senior Year

B. A. 34, *Business Management*		3
†B. A. 68, *Personnel Administration*		3
Econ. 31, *Economic and Business Statistics*	3	
Econ. 53, *Money and Banking*	3	
Econ. 56, *Corporation Finance*		3
Electives from Economics and Business Administration	3	3
Electives		
	16	16

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*Students offering one or more units of Physical Science for admission are advised to elect Biol. 1-2. Students offering one or more units of Biological Science for admission are advised to elect Physical Science.

†Requirement waived for 1954-1955.

Detailed Description of this Curriculum Appears on Page 76.

BUSINESS CURRICULUM
(Accounting Option)

Sophomore Year	First Semester Credits	Second Semester Credits
R.O.T.C.	1½	1½
P. E. 3, 4 *(For Women)*	1	1
*B. A. 24, *Introduction to Business*		3
B. A. 3-4, *Intermediate Accounting*	3	3
Econ. 3, *Economic and Commercial Development of U. S.*	3	
Econ. 1-2, *Principles of Economics*	3	3
Elective from Group I	2 or 3	2 or 3
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English 13, 14; or 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

Junior Year	First Semester Credits	Second Semester Credits
P. E. 5, 6 *(For Women)*	1	1
B. A. 7, 8, *Cost Accounting*	3	3
B. A. 21-22, *Commercial Law*	3	3
B. A. 23, *Business Communications*	3	
Econ. 25, *Marketing*	3	
Econ. 56, *Corporation Finance*		3
Engl. 35, *Public Speaking*	3	
Elective from Group III	3	3
Electives		
	16	16

Group III. — Six semester credits from Government; History; Psychology; Sociology.

Senior Year	First Semester Credits	Second Semester Credits
B. A. 55, *Advanced Accounting*	3	
B. A. 56, *Federal Tax Accounting*		3
B. A. 57, *Auditing*	3	
B. A. (59), *Accounting Systems*		3
B. A. 68, *Personnel Administration*		3
Econ. 31, *Economic and Business Statistics*	3	
Econ. 53, *Money and Banking*	3	
Electives		
	16	16

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*Requirement waived for 1954-1955.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 76.

HOTEL ADMINISTRATION CURRICULUM

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
See Freshman requirements, page 89.		
Arts 20, *Elementary Drafting*		2
Chem. 1-2, *General Chemistry*	4	4
H. Ad. 1, *Orientation*	½	
Psych. 1, *General Psychology*	3	
Electives		
	16	16
SOPHOMORE YEAR		
R.O.T.C.	1½	1½
B. A. 1-2, *Elementary Accounting*	4	4
Econ. 1-2, *Principles of Economics*	3	3
H. Ad. 42, *Lectures on Hotel Management*		½
H. Ec. 15-16, *Foods*	3	3
Phys. 1-2, *Introductory Physics*	4	4
Electives		
	16	16
JUNIOR YEAR*		
B. A. 9-10, *Hotel Accounting*	3	3
E. E. 31, *Circuits and Appliances*	4	
H. Ad. 5, *Hotel Operation*	3	
H. Ad. 26, *Hotel Engineering Problems*		3
H. Ad. 44, *Lectures on Hotel Management*		½
H. Ec. 49-50, *Quantity Cookery*	3	3
M. E. 40, *Heating and Ventilating*		3
Elective from Group I	2 or 3	2 or 3
Electives		
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English (not including Speech); Humanities 1-2; Music 33-34; Languages; Philosophy.

SENIOR YEAR		
B. A. 21-22, *Commercial Law*	3	3
H. Ad. 46, *Lectures on Hotel Management*		½
H. Ec. 46, *Textiles and Furniture*		3
Psych. 32, *Industrial Psychology*		3
Electives from Group III	3	3
Electives		
	16	16

Group III. — Six semester credits from Government; History; Sociology.

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*In addition to the requirements listed above, each student is required to secure before graduation a minimum of 20 points of Hotel Practice credit.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 76.

MEDICAL TECHNOLOGY CURRICULUM

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
See Freshman requirements, page 89 (Include Biol. 1-2 and Chemistry 3-4.)		
*Math. 11, 13, *Algebra, Trigonometry*	3	3
Electives		
	16	16

SOPHOMORE YEAR		
P. E. 3, 4, *(For Women)*	1	1
Bact. 1, *General Bacteriology*	4	
Bact. 8, *Pathogenic Bacteriology*		4
Chem. 17, *Introductory Quantitative Analysis*	4	
Chem. (45), *Organic Chemistry*		5
Hist. 1, 2, *Introduction to Contemporary Civilization*	3	3
Elective from Group I	3	3
Elective		
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English 13, 14; 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

JUNIOR YEAR		
P. E. 5, 6, *(For Women)*	1	1
Ag. Chem. 56, *Physiological Chemistry*		5
Bact. 53, *Immunology and Serology*	4	
Zool. 17, *Human Anatomy*	4	
Zool. 20, *Human Physiology*		4
Elective from Group III	3	3
Elective		
	16	16

Group III. — Six semester credits from Economics; Government; Psychology; Sociology.

SENIOR YEAR		
†Biol. 61-62, *Clinical Laboratory Methods*	16	16

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*Mathematics 2 may be substituted if the prerequisite for Mathematics 11 is not satisfied.

†This course starts on July 1 at the Mary Hitchcock Memorial Hospital School of Medical Technology and includes lecture and laboratory work in Bacteriology, Blood Bank and Serology, Clinical Chemistry, Hematology, Laboratory Management and Ethics, Mycology, Parasitology, Histology, and Clinical Microscopy. The credits are awarded in time for graduation in June of the following year after receipt of an official transcript of the grades obtained at the School of Medical Technology and certification by the Director of this School and the Supervisor of the curriculum that the work has been successfully completed.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 77.

NURSING CURRICULUM*

FRESHMAN YEAR

	First Semester Credits	*Second Semester Credits*
See Freshman requirements, page 89 (Include Biol. 1-2)		
Chem. 3-4, *General Chemistry*	4	4
	16	16

SOPHOMORE YEAR

P. E. 3, 4 *(For Women)*	1	1
Zool. 17, *Human Anatomy*	4	
Zool. 20, *Human Physiology*		4
Elective from Group I	2 or 3	2 or 3
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English 13, 14; or 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

JUNIOR YEAR

P. E. 5, 6 *(For Women)*	1	1
Ag. Chem. 1, *Organic and Biological Chemistry*	5	
Zool. 66, *Elements of Histology and Microtechnique*		3
Elective from Group III	3	3
Electives		
	16	16

Group III. — Six semester credits from Economics; Government; Psychology; Sociology.

TRAINING PERIOD

Credit earned in training at an approved hospital will apply toward a Bachelor's degree.

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*This curriculum is intended to precede hospital training.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 78.

OCCUPATIONAL THERAPY CURRICULUM

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
See Freshman requirements, page 89 (Include Biol. 1-2)		
Arts 23, *Basic Design*	2	
Arts 24, *Drawing and Design*		2
Soc. 1, *Principles of Sociology*	3	
Soc. 4, *Problems of Social Disorganization*		3
	16	16

SOPHOMORE YEAR		
P. E. 3, 4 (*For Women*)	1	1
O. T. 41, *Theory of Occupational Therapy*	3	
Psych. 1, *General Psychology*	3	
Zool. 17, *Human Anatomy*	4	
Zool. 20, *Human Physiology*		4
Elective from Group I	2 or 3	2 or 3
Elective from Group III	3	3
Elective		
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English 13, 14; or 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

Group III. — Six semester credits from Economics; Government; History.

JUNIOR YEAR		
P. E. 5, 6 (*For Women*)	1	1
O. T. 1, 2, *Crafts*	2	3
O. T. 10, *Lettering and Printing*		2
O. T. 44, *Theory of Occupational Therapy*		3
Psych. 51, *Psychology of Childhood*	3	
Zool. 19, *Kinesiology*	4	
Zool. 64, *Neurology*		4
Elective		
	16	16

SENIOR YEAR		
O. T. 5, 6, *Crafts*	3	3
O. T. 7-8, *Elementary Processes in Wood and Plastics*	2	2
O. T. 15-16, *Ceramics and Modeling*	2	2
O. T. 46, *Theory of Occupational Therapy*		3
*O. T. 49-50, *Clinical Subjects*	2	2
Psych. 47, *Mental Hygiene*	3	
Psych. 48, *Psychopathology*		3
Elective		
	16	16

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*Alternate years for Juniors and Seniors; offered in 1954-1955.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 78.

COLLEGE OF LIBERAL ARTS

PRE-MEDICAL CURRICULUM

	First Semester Credits	*Second Semester Credits*
FRESHMAN YEAR		
See Freshman requirements, page 89 (Include Biol. 1-2 and Chemistry 3-4.)		
*Math. 11, 13, *Algebra, Trigonometry*	3	3
Electives		
	16	16
SOPHOMORE YEAR		
R.O.T.C.	1½	1½
P. E. 3, 4 (*For Women*)	1	1
Chem. 26, *Qualitative Analysis*		4
Hist. 1, 2, *Introduction to Contemporary Civilization*	3	3
†Language (French or German)	3	3
Phys. 1-2, *Introductory Physics*	4	4
Zool. 7, *General Zoology*	4	
‡Elective		
	16	16
JUNIOR YEAR		
P. E. 5, 6 (*For Women*)	1	1
Chem. 51-52, *Organic Chemistry*	5	5
†Language	3	3
‖Social Science	3	3
Zool. (8), *Comparative Anatomy*	4	
‡Elective		
	16	16
SENIOR YEAR		
§Humanities Group	3	3
‖Social Science	3	3
‡Electives		
	16	16

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*Math. 2 may be substituted for Math. 11 if high school prerequisites for Math 11 are not presented as entrance credit.

†Either French or German. If the student passes an entrance reading test in either French or German, one year of the same language will fulfill the language requirement. To fulfill the requirement the student must complete either French 3-4; 5-6; German 3-4; or 5-6.

‡No more than 24 semester hours of Biology (including Botany, Bacteriology, Entomology, and Zoology), Chemistry, and Physics in addition to the required courses may be taken as elective.

‖The student must complete 12 semester hours selected from courses in the following departments. Economics, Government, History (other than Hist. 1, 2), Psychology, Sociology. Courses from at least three of the five departments must be presented.

§The student must complete 6 semester hours from the following courses: Humanities 1-2; Music 33-34; Arts 31, 32; Philosophy 1, 2, 4, 19; English 13, 14, 15, 16 (or English courses numbered 51-100).

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 80.

SECRETARIAL CURRICULUM*

FRESHMAN YEAR

	First Semester Credits	Second Semester Credits
See Freshman requirements, page 89.		
Electives		
	16	16

SOPHOMORE YEAR

	First Semester Credits	Second Semester Credits
P. E. 3, 4 (*For Women*)	1	1
B. A. 24, *Introduction to Business*		3
Econ. (3), *Economic and Commercial Development of the U.S.*		3
Secl. 1-2, *Shorthand*	3	3
Secl. 7-8, *Typewriting*	2	2
Secl. 23-24, *Business Writing*	3	3
Electives		
	16	16

JUNIOR YEAR

	First Semester Credits	Second Semester Credits
P. E. 5, 6 (*For Women*)	1	1
B. A. 1-2, *Elementary Accounting*	4	4
Elective from Group I	2 or 3	2 or 3
†Secl. 3-4, *Advanced Shorthand*	3	3
†Secl. 9-10, *Advanced Typewriting*	2	2
Electives		
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English 13, 14; or 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

SENIOR YEAR

	First Semester Credits	Second Semester Credits
B. A. 21-22, *Commercial Law*	3	3
Secl. 11, *Filing*	2	
Secl. (13), *Office Machines*		2
Secl. 17-18, *Office Procedure and Practice*	3	3
Elective from Group III	3	3
Electives		
	16	16

Group III. — Six semester credits from Economics; Government; Psychology; Sociology.

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*Students preparing to teach Secretarial subjects must elect in addition a sufficient number of courses in Education to meet state requirements. See page 84 for a description of the Commercial Teacher Preparation Program as an option in the Secretarial Curriculum.

†A grade of C or better in Secl. 8 will be required of students electing Secl. 9-10; and a grade of C or better in Secl. 2 will be required of students electing Secl. 3-4.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 80.

SOCIAL SERVICE CURRICULUM

FRESHMAN YEAR

	First Semester Credits	Second Semester Credits
See Freshman requirements, page 89 (Include Biol. 1-2)		
Soc. 1, *Principles of Sociology*	3	
Soc. 4, *Problems of Social Disorganization*		3
Electives		
	16	16

SOPHOMORE YEAR

R.O.T.C.	1½	1½
P. E. 3, 4 (*For Women*)	1	1
Bact. 5, *Public Health and Sanitation*	3	
Psych. 1, *General Psychology*	3	
Psych. (47), *Mental Hygiene*		3
Soc. 43, *Urban Sociology*	3	
Soc. 44, *Social Psychology*		3
Elective from Group I	2 or 3	2 or 3
Electives		
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English 13, 14; or 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

JUNIOR YEAR

P. E. 5, 6 (*For Women*)	1	1
Soc. 71, *Crime in American Society*	3	
Soc. 72, *Marriage and the Family*		3
Soc. 73, 74, *Introduction to Social Work*	3	3
Soc. 75, *Methods of Social Research*	3	
Elective from Group III	3	3
Electives		
	16	16

Group III. — Six semester credits from Economics; Government; History.

SENIOR YEAR

Soc. 95, 96, *Social Research Seminar*	3	3
Soc. 97, *Social Service Field Work*	6	
Zool. 61, *Genetics*	3	
Electives		
	16	16

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 81.

ART EDUCATION CURRICULUM

Freshman Year	*First Semester Credits*	*Second Semester Credits*
See Freshman requirements, page 89.		
Arts 23, *Basic Design*	2	
Arts 24, *Drawing and Design*		2
Electives		
	16	16
Sophomore Year		
R.O.T.C.	1½	1½
P. E. 3, 4 (*For Women*)	1	1
Arts 15, 16, *Ceramics*	2	2
Arts 25, 26, *Advanced Drawing and Painting*	3	3
Educ. 41, 42, *Educational Psychology*	3	3
Elective from Group I	2 or 3	2 or 3
Elective from Group III	3	3
Elective		
	16	16

Group I. — A year's work (two sequential semesters) from English 13, 14; or 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

Group III. — Six semester credits from Economics; Government; History; Psychology; Sociology.

Junior Year		
P. E. 5, 6 (*For Women*)	1	1
Arts 27, *Graphic Arts*	3	
Arts 28, *Commercial Design*		3
Arts 31, 32, *Introduction to The Arts*	3	3
Arts 35, *Stagecraft*	2	
Educ. (52), *Principles of American Secondary Education*	3	
Educ. 58, *Secondary School Teaching*		4
H. Ec. 34, *Home Decoration*		3
H. Ec. 65, *History of Costume*	3	
Elective		
	16	16
Senior Year		
Arts 3, *Crafts*	2	
Arts 29, *Advanced Painting, Watercolor and Oil*	3	
Art-Ed. 91, *Problems of Teaching Art in Elementary Schools*	3	
Art-Ed. (92), *Problems of Teaching Art in Secondary Schools*	3	
Ed.-Art. 94, *Supervised Teaching*		14
Electives		
	18	14

Detailed Description of this Curriculum Appears on Page 84.

MUSIC EDUCATION CURRICULUM

Freshman Year	*First Semester Credits*	*Second Semester Credits*
See Freshman requirements, page 89.		
*Applied Music	2	2
Mus. 9-10, *Sightsinging, Ear Training, and Dictation I*	1	1
†Recitals		
Electives		
	16	16

Sophomore Year		
R.O.T.C.	1½	1½
P. E. 3, 4 (*For Women*)	1	1
*Applied Music	2	2
Educ. 41, 42, *Educational Psychology*	3	3
‡Mus. 11-12, *Harmony I*	2	2
Mus. 13-14, *Sightsinging, Ear Training, and Dictation II*	1	1
Mus. 41-42, *Principles of Conducting*	1	1
Mus. 45, 46, *Music History and Literature*	2	2
Music Organizations	½	½
Elective from Group III	3	3
†Recitals		
	16	16

Group III. — Six semester credits from Economics; Government; History; Psychology; or Sociology.

Junior Year§		
P. E. 5, 6 (*For Women*)	1	1
*Applied Music	3	3
Educ. 52, *Principles of American Secondary Education*		3
Educ. (58), *Secondary School Teaching*	4	
Language (*French, German, or Italian*)	3	3
Mu.-Ed. (91), *Problems in the Teaching of Elementary School Music*		3
Mu.-Ed. 97, *Teaching of Brass and Percussion*	2	
Mus. 15-16, *Harmony II*	2	2
Mus. 97-98, *Orchestration and Chorestration*	2	2
Music Organizations	½	½
†Recitals		
	17½	17½

For explanation of footnotes, see page 104.

SENIOR YEAR	*First Semester Credits*	*Second Semester Credits*
*Applied Music	2	
Mu.-Ed. (92), *Problems in the Teaching of Secondary School Music*	3	
Mu.-Ed. 95, *Teaching of Stringed Instruments*	2	
Mu.-Ed. (96), *Teaching of Woodwinds*	2	
Music Organizations	1	
Electives		
§Ed.-Mu. (93), *Supervised Teaching of Elementary School Music*		3–7
§Ed.-Mu. 94, *Supervised Teaching of Secondary School Music*		3–7
	15	6 or 14

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*A minimum of 16 semester hours in Applied Music must be offered by students in this Curriculum.

†Recitals — Students enrolled in this Curriculum must accumulate a minimum of 24 points in the Sophomore, Junior, and Senior Years. Attendance at each concert or recital constitutes one point.

‡Although Mus. 9-10 is normally a prerequisite to 11-12, it may be taken simultaneously with 11-12 by permission of instructors.

§All students in the Music-Education Curriculum must have a voice and piano audition at the end of the Junior Year, and an oral comprehensive examination covering all fields of Music preparation before entering upon practice teaching.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 85.

PHYSICAL EDUCATION
TEACHER PREPARATION CURRICULUM FOR MEN

Freshman Year	*First Semester Credits*	*Second Semester Credits*
See Freshman requirements, page 89 (Include Biol. 1-2)		
Basic course in second teaching major	3	3
	16	16

Sophomore Year

R.O.T.C.	1½	1½
Educ. 41, 42, *Educational Psychology*	3	3
P. E. 23, *Principles of Physical Education*	3	
Second teaching major; *Second year*	3	3
Zool. 17, *Human Anatomy*	4	
Zool. 18, *Human Physiology*		3
Group III	3	3
Elective		
	17½	16

Group III. — Six semester credits from Economics; Government; Psychology; Sociology.

Junior Year

Educ. (52), *Principles of American Secondary Education*	3	
Educ. 58, *Secondary School Teaching*		4
*Ed.-P. E. (93), *Directed Teaching in Physical Education*		3
P. E. 61, *Problems of Teaching in Physical Education*	3	
†Problems of coaching, *P. E. 45, (46)*	4	
†Problems of coaching, P. E. *(47) 48*		4
Second teaching major	3	3
Group I	2 or 3	2 or 3
Elective, *first teaching minor*		
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English 13, 14; or 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

For explanation of footnotes, see page 106.

SENIOR YEAR

*Ed.-P. E. 93, *Directed Teaching in Physical Education*	3	
P. E. 65, *Administration of Physical Education in Secondary Schools*	3	
†Problems of coaching, *P. E. 45, (46)*	4	
Problems in teaching, *Second teaching major, i.e., Engl.-Ed. 91, etc.*	3	
Second teaching major	3	
Supervised teaching in major or majors, *i.e., Ed.-Engl. 94, etc.*		14
Elective		
	16½	14

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*This course is required and may be elected in the second semester of the Junior Year or the first semester of the Senior Year.

†Four problems of coaching courses are required.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 86.

PHYSICAL EDUCATION
TEACHER PREPARATION CURRICULUM FOR WOMEN*

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
See Freshman requirements, page 89 (Include Biol. 1-2)		
Electives		
P. E. 11, 12	1	1
	16	16

SOPHOMORE YEAR		
P. E. 3, 4	1	1
P. E. 23, *Principles of Physical Education*	3	
P. E. (36), *Recreation Leadership*	3	
Educ. 41, 42, *Educational Psychology*	3	3
Zool. 17, *Human Anatomy*	4	
Zool. 18, *Human Physiology*		3
Elective from Group I	2 or 3	2 or 3
Elective		
	16	16

Group I. — A year's work (two sequential semesters) from Arts 31, 32; English 13, 14; or 15, 16; Humanities 1-2; Languages; Music 33-34; Philosophy.

JUNIOR YEAR

Physical Education Option†

P. E. 5, 6	1	1
Educ. 52, *Principles of American Secondary Education*		3
P. E. 53, 54, *Survey of Dance*	2	2
P. E. 56, *Health Education*		3
P. E. 63, 64, *Theory of Team Sports*	2	2
Zool. 19, *Kinesiology*	3	
Elective from Group III	3	3
Electives		
	16	16

Group III. — Six semester credits from Government; History; Psychology; Sociology; Economics.

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*Students desiring to go into physical therapy may, by petitioning, make certain substitutions in this program.

†Students desiring to teach in areas in addition to Physical Education must plan to take Educ. 58. They must also elect 18 semester hours in this second field.

Junior Year

Recreation Option*

P. E. 5, 6	1	1
Arts 35, *Stagecraft*	2	
Arts 4, *Crafts*		2
Engl. 48, *Dramatics Workshop*		3
P. E. 24, *Organized Camping*		3
P. E. 53, 54, *Survey of Dance*	2	2
P. E. 73, 74, *The Theory of Teaching Individual Sports for Women*	2	2
Soc. 1, *Principles of Sociology*	3	
Soc. 4, *Problems of Social Disorganization*		3
Electives		
	16	16

Senior Year

Physical Education Option†

Ed.-P. E. 92, *Directed Teaching of Physical Education for Women*		6
P. E. 55, *Remedial Gymnastics*	3	
P. E. (66), *Administration of Physical Education*	3	
P. E. 73, 74, *The Theory of Teaching Individual Sports for Women*	2	2
P. E.-Ed. 91, *Problems in the Teaching of Physical Education for Women*	3	
Electives other than Physical Education	3	3
	16	16

Recreation Option*

Biol. 42, *Field Biology and Nature Study*			3
‡Mus. 33, or (33), *Music Appreciation*	2	or	2
P. E. (66), *Administration of Physical Education*	3		
P. E. 96, *Recreation Field Work*	3		
P. E.-Ed. 91, *Problems in the Teaching of Physical Education for Women*	3		
Soc. 39, *Rural Sociology*	3		
Elective from Group I	2 or 3		2 or 3
Elective from Group III	3		3
	16		16

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*In addition to the requirements listed above, each student is required to secure before graduation a minimum of 8 points of community recreation or camping credit.

†Students desiring to teach in areas in addition to Physical Education must plan to take Educ. 58. They must also elect 18 semester hours in this second field.

‡If Music has already been taken in the Sophomore year, 3 additional hours in Group I must be taken in the Senior year.

DETAILED DESCRIPTION OF THIS CURRICULUM APPEARS ON PAGE 86.

The College of Technology

Lauren E. Seeley, *Dean*

DEPARTMENTS

Chemical Engineering	Mathematics
Chemistry	Mechanical Engineering
Civil Engineering	**Physics**
Electrical Engineering	

REQUIREMENTS FOR DEGREES

Baccalaureate Degree

Each candidate for a degree must complete 144 semester credits including the courses required in one of the Four-Year Curriculums, and achieve a grade-point average of at least 1.8. These degrees are: Bachelor of Science in Chemistry, Bachelor of Science in Chemical Engineering, Bachelor of Science in Civil Engineering, Bachelor of Science in Building Construction, Bachelor of Science in Electrical Engineering, Bachelor of Science in Mathematics, Bachelor of Science in Mechanical Engineering, and Bachelor of Science in Physics.

Professional Degree

Mechanical, Electrical, and Civil Engineering graduates of the University of New Hampshire are eligible to register as candidates for professional degrees in these three branches of Engineering. A charge of $50.00 for in-state and $75.00 for out-of-state candidates will be made.

These degrees will be granted, after the preparation and submission of acceptable theses, to those having not less than four year's satisfactory professional experience subsequent to the Bachelor's Degree, in which the applicants have wholly or in part supervised, directed, or designed engineering work; or have been in responsible charge of instruction or research in Engineering. The acceptability of the thesis and professional experience is determined by an Examining Committee.

Procedure — The procedure for candidates for Professional Engineering degrees is as follows:

(1) Prepare an outline for a thesis after consultation with the Chairman of the Department concerned. This consultation may be by letter.

(2) When the thesis subject is accepted by the Chairman of the Department in which the degree is to be taken, the candidate will be registered in the Recorder's Office. This registration must be completed by October 1 of the academic year in which the degree is to be conferred.

(3) The first draft of the thesis must be submitted to the professor in charge not later than March 1, and the complete thesis in its final form by May 1.

(4) Pass an oral examination at the University covering the candidate's professional practice and the engineering principles underlying the thesis.

Thesis — The thesis must be typewritten upon standard paper, 8½ by 11 inches medium weight, neatly bound in black cloth, and gilt-lettered on the first cover with title, name of author, degree sought, and year of graduation. The title page should bear the following statements:

"A thesis submitted to the University of New Hampshire in partial fulfillment of the requirements for the professional degree of mechanical engineer (electrical engineer, civil engineer)."

Whenever a thesis is printed in any periodical, it must be designated as having been accepted as a Professional Engineering thesis by the University of New Hampshire.

Two bound copies must be filed before Commencement Day, one with the Librarian and one with the Chairman of the Department in which the major is done.

The second page of each copy of the thesis shall bear the date of approval and the signature of each member of the examining committee following the statement:

"This thesis has been examined and approved."

(signed) ....
Name Date

CURRICULUMS

The College of Technology offers the following Four-Year Curriculums:

Building Construction Curriculum

This Curriculum which is offered by the Department of Civil Engineering is designed to give the student basic training and instruction in engineering and general building construction practice; to acquaint him with and to train him in the problems connected with the construction of light buildings and houses; to develop in the student an understanding of and appreciation for the relationships of the client, architect, engineer, builder, manufacturer, and public agencies in planning, designing, financing, and erecting public and private buildings. Inquiries for additional information should be directed to the Chairman of the Department of Civil Engineering. No one will be admitted to this curriculum who cannot complete the degree requirements by June, 1957.

Chemical Engineering Curriculum

Chemical Engineering is that branch of engineering which involves the application of chemistry, physics, mathematics, and fundamental engineering principles to the design, construction, operation, control, and improvement of equipment for carrying out chemical processes on an industrial scale at the lowest possible cost. The Chemical Engineering Curriculum, therefore, is designed to give the student basic training in the physical sciences, engineering principles, and economics, and thus enable him to become a member of this profession. Although Chemical Engineering is a distinct profession, chemical engineers are considered to be members of the chemical profession as well as of the engineering profession and a considerable portion of the Chemical Engineering Curriculum is devoted to the science of Chemistry. However, emphasis is placed not upon the laboratory phases of Chemistry, but upon the large-scale manufacture of chemical products.

Chemistry Curriculum

This Curriculum is intended to prepare the student for the career of a professional chemist in industry and to give a good foundation for further study in graduate schools leading to original and independent research.

Instruction is imparted by lectures, recitations, and carefully supervised laboratory work. The laboratory study is largely individual and the course work of each student is planned to furnish a broad knowledge of chemical science. The student may elect either German or French to enable him to read with ease the chemical literature, and receives a grounding in Mathematics and Physics necessary for the later courses in Chemistry. In the Senior year an independent research project, which permits the student to use the reference library and chemical periodicals throughout the course of the laboratory investigation, is undertaken.

Civil Engineering Curriculum

This Curriculum is designed to give the student theoretical and practical instruction in the principles on which the practice of Civil Engineering is based, and to give him the opportunity of applying these principles in the classroom, design room, laboratory, and field.

Civil Engineering, the oldest of the engineering professions, covers a broad field of activity, including Structural, Transportation, Hydraulic and Sanitary Engineering, and Surveying by plane, topographic, geodetic, and photogrammetric methods. This Curriculum places about equal emphasis on each of the main branches.

Electrical Engineering Curriculum

The Electrical Engineering Curriculum is intended to meet the demands of young men fitting themselves for professional Engineering in connection with the various applications of electricity.

Courses are presented by lectures, recitations, and laboratory practice in such a manner as to make the material of immediate service to the graduate, as well as to prepare him to understand the constantly increasing number of new developments in this field.

Technology Curriculum in Mathematics

The Technology Curriculum in Mathematics is intended to provide an education in the fundamentals of pure and applied Mathematics. It also affords a training in the sciences closely allied to Mathematics. The study of German and French is included so that the student can read the mathematical literature in these languages. Available for the use of the student is the reading room in DeMeritt Hall containing mathematical periodicals and books. This Curriculum offers a preparation which serves equally well for either graduate study or research in industry or research in the various government agencies. In the broader sense it aims to furnish a training useful in any scientific activity.

Mechanical Engineering Curriculum

The Mechanical Engineering Curriculum is intended to meet the demands of young men fitting themselves for professional practice in Mechanical Engineering. The courses in the Curriculum are designed to give the student training in the basic physical sciences and in the fundamentals of engineering; later courses apply the fundamentals to the practice of Mechanical Engineering. Throughout the Curriculum the theoretical work is supplemented by extensive laboratory practice.

Physics Curriculum

The Technology Curriculum in Physics is intended to offer basic training in fundamentals, supplemented by laboratory work, in the various branches of Physics. Opportunity is given in the Senior year for experimental investigation in some of the fields of Physics under guidance of staff members. Such a curriculum prepares one equally well either for basic research in industry or the various government research organizations or for continued academic study toward the more advanced degrees.

Note — Agricultural Engineering is offered by the College of Agriculture (see page 48). Basic science and some engineering courses in the Curriculum of Agricultural Engineering are given by the College of Technology.

Alumni Representation

An Advisory Committee of Alumni of the College of Technology, composed of men in contact with industry and practical professional affairs, serves to keep the Faculty in touch with developments in the several fields which attract our graduates. Members of this committee also serve as consultants when important changes in curriculums, faculty personnel, and policies of administration are considered. The members are:

John T. Croghan, B.S. in M.E., '08, 574 Chestnut Street, Waban 68, Mass.

Donald B. Keyes, Ph.D., B.S. in Chem., '13, Arthur D. Little, Inc., 2041 Graybar Building, 420 Lexington Ave., New York, N. Y.

Donald W. Loiselle, B.S. in C.E. (M.S., Harvard, '41), Bridgeport Hydraulic Company, Bridgeport, Conn.

Austin S. Norcross, B.S. in E.E., '25 (M.Sc., Mass. Inst. Tech., '29), Norcross Corp., 247 Newtonville Ave., Newton 58, Mass.

Lester A. Pratt, Ph.D., B.S. in Chem., '06, 7 Everett Avenue, Winchester, Mass.

BUILDING CONSTRUCTION*

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
P. E. 31-32	½	½
R.O.T.C.	1½	1½
Chem. 3-4, *General Chemistry*	4	4
C. E. 2, *Surveying*		2
Engl. 1-2, *Freshman English*	3	3
Math. 11, *Algebra*	3	
Math. 13, *Trigonometry*	3	
Math. 14, *Analytic Geometry*		3
Math. 16, *Calculus I*		3
M. E. 1-2, *Engineering Drawing*	2	2
	17	19

SOPHOMORE YEAR

R.O.T.C.	1½	1½
B-C.E. 11-12, *Domestic Architecture*	2	2
C. E. 11, *Surveying*	3	
Econ. 1-2, *Principles of Economics*	3	3
Geol. 7, *General Geology*		2
Math. 17-18, *Calculus II and III*	3	3
Phys. 21-22, *General Physics*	6	6
	18½	17½

JUNIOR YEAR

B. A. 1-2, *Elementary Accounting*	4	4
B-CE. 21-22, *Building Construction*	3	3
C. E. 15, *Engineering Materials*	3	
C. E. 27-28, *Theory of Structures*	4	3
E. E. (33), *Fundamentals of Electricity*		4
M. E. 9-10, *Mechanics*	3	4
	17	18

SENIOR YEAR

B-CE. 31-32, *Professional Practices*	3	3
C. E. 31, *Community Planning*	3	
C. E. 35, *Structural Design in Steel*	3	
C. E. 37, *Reinforced Concrete Design*	3	
C. E. 38, *Structural Engineering*		3
C. E. 40, *Soil Mechanics and Foundations*		3
Econ. 25, *Marketing*	3	
M. E. 40, *Heating and Air Conditioning*		3
Approved Elective	4	6
	19	18

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*No one will be admitted to this curriculum who cannot complete the degree requirements by June, 1957.

CHEMICAL ENGINEERING

FRESHMAN YEAR

	First Semester Credits	*Second Semester Credits*
P. E. 31, 32	½	½
R.O.T.C.	1½	1½
Chem. 3-6, *General; Inorganic*	4	6
Ch. E. 12, *Engineering Materials*		2
Engl. 1-2, *Freshman English*	3	3
M. E. 1, *Engineering Drawing*	2	
Math. 11, *Algebra*	3	
Math. 13, *Trigonometry*	3	
Math. 14, *Analytical Geometry*		3
Math. 16, *Calculus I*		3
	17	19

SOPHOMORE YEAR

R.O.T.C.	1½	1½
Chem. 21, *Semi-Micro Qualitative Analysis*	4	
Chem. 22, *Quantitative Analysis*		5
Econ. 1-2, *Principles of Economics*	3	3
Math. 17-18, *Calculus*	3	3
Phys. 21-22, *General Physics*	6	6
	17½	18½

JUNIOR YEAR

Ch. E. 41, *Process Engineering Principles*	5	
Chem. 53-54, *Organic Chemistry*	5	5
Chem. 83-84, *Physical Chemistry*	5	5
Ch. E. 71-72, *Unit Processes*	2	2
Ch. E. 74, *Unit Operations*		3
E. E. 33, *Fundamentals of Electricity*		4
Math. 19, Engl. 35, or Approved Elective	3	
	20	19

SENIOR YEAR

Ch. E. 75, *Unit Operations*	3	
Ch. E. 76, *Chemical Engineering Economics*		3
Ch. E. 77, *Unit Operations Laboratory*	3	
Ch. E. 78, *Chemical Plant Design*		3
Ch. E. 79, *Chemical Engineering Thermodynamics*	3	
Ch. E. 80, *Chemical Engineering Project*, or Approved Elective		5
Chem. 87-88, *Chemical Literature and Seminar*	1	1
M. E. 7-8, *Mechanics*, or Approved Elective	4	4
Approved Elective	3	
	17	16

TECHNOLOGY CURRICULUM IN CHEMISTRY

Freshman Year

	First Semester Credits	*Second Semester Credits*
P. E. 31, 32	½	½
R.O.T.C.	1½	1½
Chem. 3-6, *General; Inorganic*	4	6
Engl. 1-2, *Freshman English*	3	3
M. E. 1, *Engineering Drawing*	2	
Math. 11, *Algebra*	3	
Math. 13, *Trigonometry*	3	
Math. 14, *Analytic Geometry*		3
Math. 16, *Calculus I*		3
	17	17

Sophomore Year

R.O.T.C.	1½	1½
Chem. 21, *Semi-Micro Qualitative Analysis*	4	
Chem. 22, *Quantitative Analysis*		5
Math. 17, 18, *Calculus*	3	3
Phys. 21-22, *General Physics*	6	6
Ger. 1-2, *Elementary German*	3	3
	17½	18½

Junior Year

Chem. 31, *Tech. Quantitative Analysis*	3	
Chem. 33, *Stoichiometry*	2	
Chem. 53-54, *Organic Chemistry*	5	5
Chem. 62, *Instrumental Analysis*		5
Chem. 83-84, *Physical Chemistry*	5	5
Approved Elective	3	3
	18	18

Senior Year

Chem. 55-56, *Organic Chemistry*	3	3
Chem. 85-86, *Physical Chemistry*	3	3
Chem. 87, 88, *Chemical Literature and Seminar*	1	1
Chem. 89-90, *Thesis*, or Approved Elective	6	6
Approved Electives	6	6
	19	19

CIVIL ENGINEERING

FRESHMAN YEAR	*First Semester Credits*	*Second Semester Credits*
P. E. 31-32	½	½
R.O.T.C.	1½	1½
Chem. 3-4, *General Chemistry*	4	4
C. E. 2, *Surveying*		2
Engl. 1-2, *Freshman English*	3	3
Math. 11, *Algebra*	3	
Math. 13, *Trigonometry*	3	
Math. 14, *Analytic Geometry*		3
Math. 16, *Calculus I*		3
M. E. 1-2, *Engineering Drawing*	2	2
	17	19
SOPHOMORE YEAR		
R.O.T.C.	1½	1½
C. E. 3-4, *Surveying*	6	3
C. E. 6, *Route Surveying*		3
Math. 17-18, *Calculus II and III*	3	3
Phys. 21-22, *General Physics*	6	6
	16½	16½
JUNIOR YEAR		
C. E. 15, *Engineering Materials*	3	
C. E. 22, *Fluid Mechanics*		4
C. E. 27-28, *Theory of Structures*	4	3
C. E. 41, 42, *Student Chapter A.S.C.E.*	½	½
E. E. (33), *Fundamentals of Electricity*		4
Geol. 7, *General Geology*	2	
M. E. 9-10, *Mechanics*	3	4
M. E. 21, *Heat Power Engineering*	3	
Econ. 1-2, *Principles of Economics*	3	3
	18½	18½
SENIOR YEAR		
C. E. 33-34, *Hydraulic and Sanitary Engineering*	4	5
C. E. 35, *Structural Design in Steel*	3	
C. E. 37, *Reinforced Concrete Design*	3	
C. E. 38, *Structural Engineering*		3
C. E. 39, *Highway Engineering and Transportation*	4	
C. E. 40, *Soil Mechanics and Foundations*		3
C. E. 43, 44, *Student Chapter, A.S.C.E.*	½	½
Engl. 23, *Writing of Technical Reports*		2
Approved Elective	4	6
	18½	19½

ELECTRICAL AND MECHANICAL ENGINEERING

Freshman Year	*First Semester Credits*	*Second Semester Credits*
P. E. 31, 32	½	½
R.O.T.C.	1½	1½
Chem. 3-4, *General Chemistry*	4	4
Engl. 1-2, *Freshman English*	3	3
Math. 11, *Algebra*	3	
Math. 13, *Trigonometry*	3	
Math. 14, *Analytical Geometry*		3
Math. 16, *Calculus*		3
M. E. 1-2, *Engineering Drawing*	2	2
	17	17

Note: The program for the Freshman year in the Curriculums in Electrical Engineering and Mechanical Engineering is the same.

The programs for the Sophomore, Junior, and Senior years in the Electrical Engineering Curriculum are given on page 118. The programs for the Sophomore, Junior, and Senior years in the Mechanical Engineering Curriculum are given on page 120.

ELECTRICAL ENGINEERING

SOPHOMORE YEAR	*First Semester Credits*	*Second Semester Credits*
R.O.T.C.	1½	1½
Econ. 1-2, *Economics*	3	3
E. E. 1-2, *Electrical Engineering*	3	4
Math. 17-18, *Calculus*	3	3
M. E. (4), *Kinematics*	3	
Phys. 21-22, *General Physics*	6	6
	19½	17½
JUNIOR YEAR		
E. E. 3-4, *Electrical Engineering*	3	3
E. E. 5, *Circuit Theory*	3	
E. E. 6, *Electronics*		4
E. E. 15, 16, *A.I.E.E. Required*		
E. E. 23-24, *Electrical Laboratory*	2	2
Math. 19, *Differential Equations*	3	
*Math. 20, *Applied Mathematics*		3
M. E. 9-10, *Mechanics*	3	3
M. E. 23-24, *Thermodynamics*	3	3
M. E. 27, 28, *Mechanical Laboratory*	1	1
	18	19
SENIOR YEAR		
C. E. 23, *Fluid Mechanics*	3	
E. E. 12, *Illumination* or Approved Elective		2
E. E. 17, 18, *A.I.E.E. Required*		
E. E. 25, *Electrical Laboratory*	2	
E. E. 45, *Electrical Engineering*	3	
E. E. 7, *Electronics*	4	
*E. E. 58, *Communication Systems*		4
*E. E. 60, *Advanced Circuit Theory*		4
*‡E. E. (70), 70, *Advanced Electronic Laboratory*	2–4	2–4
*E. E. 76, *Electrical Laboratory*		4
*E. E. 78, *Industrial Electronics*		4
Engl. (23), *Writing of Technical Reports*		2
M. E. 65, *Engineering Economy*	3	
M. E. 66, *Industrial Management*		3
‡Phys. (64), 64, *Electrical Measurements*	3	3
Approved non-technical elective. Optional	3	3
	19	20

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*E.E. 58, 60, 70, 76, 78, and Math. 20 are elective courses. Seniors are expected to enroll in a minimum of 14 credits chosen from the required and elective courses of the second semester.

‡E.E. 70 and Phys. 64 are repeated in the first semester for convenience in scheduling.

TECHNOLOGY CURRICULUM IN MATHEMATICS

FRESHMAN YEAR

	First Semester Credits	*Second Semester Credits*
P. E. 31, 32	½	½
R.O.T.C.	1½	1½
Engl. 1-2, *Freshman English*	3	3
Math. 11-14, *Algebra, Analytical Geometry*	3	3
Math. 13-16, *Trigonometry, Calculus I*	3	3
Chem. 3-4, *General Chemistry*	4	4
Approved Elective	3	3
	18	18

SOPHOMORE YEAR

R.O.T.C.	1½	1½
Math. 17-18, *Calculus II, Calculus III*	3	3
Math. 43-44, *Mathematical Statistics*	3	3
Phys. 21-22, *General Physics*	6	6
Ger. 1-2, *Elementary German*	3	3
Approved Elective	2 or 3	2 or 3
	18½ or 19½	18½ or 19½

JUNIOR YEAR

Math. 19-20, *Differential Equations, Applied Mathematics*	3	3
Math. 47-48, *Introduction to Analysis*	3	3
Math. 61-62, *Higher Algebra*	3	3
Econ. 1-2, *Principles of Economics*, or Psych. 1-2, *General Psychology*	3	3
Ger. 3b-4b, *Intermediate German*	3	3
Approved Elective	3	3
	18	18

SENIOR YEAR

Math. 65-66, *Advanced Calculus*	3	3
Math. 85, 86, *Theory of Functions*	3	3
Phys. 85-86, *Physical Mechanics*	3	3
French 1-2, *Elementary French*	3	3
Approved Electives	6	6
	18	18

MECHANICAL ENGINEERING

SOPHOMORE YEAR	*First Semester Credits*	*Second Semester Credits*
R.O.T.C.	1½	1½
Econ. 1-2, *Economics*	3	3
Math. 17-18, *Calculus*	3	3
M. E. 3, *Machine Drawing*	2	
M. E. 4, *Kinematics*		3
M. E. 11-12, *Manufacturing Processes*	2	2
Phys. 21-22, *General Physics*	6	6
	17½	18½

JUNIOR YEAR		
C. E. (23), *Fluid Mechanics*		3
E. E. 37-38, *Electrical Machinery*	4	4
M. E. 7-8, *Mechanics*	4	4
M. E. 19-20, *Mechanical Engineering Materials*	3	2
M. E. 23-24, *Thermodynamics*	3	3
M. E. 29-30, *Mechanical Laboratory*	2	2
M. E. 59, 60, *A.S.M.E.*		
Approved Elective	3	
	19	18

SENIOR YEAR		
Engl. 23, *Writing of Technical Reports*	2	
M. E. 15-16, *Machine Design*	3	3
M. E. 51, *Mechanical Laboratory*	2	
M. E. 53-54, *Power Plants*	2	3
M. E. 55-56, *Internal Combustion Engines*	3	3
M. E. 61, 62, *A.S.M.E.*		
M. E. 65, *Engineering Economy*	3	
M. E. 66, *Industrial Management*		3
Approved Elective	4	6
	19	18

Note — See page 117 for Freshman requirements.

TECHNOLOGY CURRICULUM IN PHYSICS

Freshman Year	*First Semester Credits*	*Second Semester Credits*
P. E. 31, 32	½	½
R.O.T.C.	1½	1½
Chem. 3, 4, *General Chemistry*	4	4
Engl. 1-2, *Freshman English*	3	3
Math. 11-14, *Algebra, Analytical Geometry*	3	3
Math. 13-16, *Trigonometry, Calculus*	3	3
M. E. 1, *Engineering Drawing*, Approved Elective*	2	3
	17	18
Sophomore Year		
R.O.T.C.	1½	1½
Econ. 1-2, *Economics*	3	3
Math. 17-18, *Calculus*	3	3
Ger. 1-2, *German*	3	3
Phys. 21-22, *General Physics*	6	6
	16½	16½
Junior Year		
Math. 19, 20, *Diff'l Eq'ns, Applied Mathematics*	3	3
Phys. 81, *Optics*	4	
Phys. 82, *Heat*		4
Phys. 83-84, *Theory of Electricity and Magnetism*	4	4
Phys. 85-86, *Advanced Mechanics*	3	3
*Approved Elective	5	5
	19	19
Senior Year		
Phys. 91-92, *Modern Physical Theories*	3	3
Phys. 93-94, *Theoretical Physics*	3	3
Phys. 95-96, *Advanced Laboratory*	2	2
Phys. 97, *Electrical Discharge Through Gases*		4
Math. 65-66, *Advanced Calculus*	3	3
E. E. 59, *Electron Tubes and Devices*	4	
*Approved Elective	4	4
	19	19

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*Electives may be selected from the following list: English 13, 14, 15, 16, 23, 25; French 1, 2; Geology 1, 2, 7; Geography 1, 2, 3, 4; German 7, 8; Government 1, 2, 4, 7, 8; History 1, 2, 7, 8, 19, 20, 21, 22, 31, 32; Humanities 1, 2; Psychology 1, 2; Sociology 1, 3, 34, 39, 43.

The Graduate School

Herbert J. Moss, *Dean*

The Graduate School, which has offered instruction since 1903, has for its objective the bringing together of faculty and qualified students in a spirit of scholarship and research. The graduate student is given opportunity to specialize in some field of knowledge, and to develop a maturity of thought and attitude toward his professional field, so that both his professional and his cultural life are enhanced. Graduate work is offered by members of the University departments of instruction and research The work of the Graduate School is under the general direction of the Graduate Faculty, composed of certain administrative officers, all department chairmen whose departments are offering graduate work, and all instructors who are offering courses numbered from 101 through 199 in any given year, inclusive of the Summer Session, or who are supervising graduate theses. The Dean of the Graduate School is responsible for the administration of the regulations and requirements pertaining to admission, conduct of work, the granting of advanced degrees, and other pertinent matters.

Degrees

Graduate programs are offered by the following departments: Agricultural and Biological Chemistry, Agricultural Economics, Agricultural Education, Agronomy, Animal Husbandry, Bacteriology, Biology, Botany, Chemical Engineering, Entomology, Home Economics, Horticulture, Mathematics, Mechanical Engineering, Physics, Poultry Husbandry, and Zoology leading to the Master of Science degree; Economics, English, Government, History, Languages, Psychology, and Sociology leading to the Master of Arts degree, and Education leading to the Master of Education degree. Graduate programs are offered in the Departments of Botany, Chemistry, and Horticulture leading to the Doctor of Philosophy degree.

Assistantships and Scholarships

Graduate assistantships are available in a number of departments. The work required may be in the nature of research, teaching, or general service. For information regarding assistantships, one should direct inquiries to the chairman of the department concerned.

A limited number of graduate scholarships are available each year. The recipient of such a scholarship is exempted from the payment of tuition. Requirements for the awards are: 1) a superior undergraduate record, and 2) the successful completion of a qualifying examination. For information concerning scholarships one should direct inquires to the Dean of the Graduate School.

Information

For detailed information concerning admission, requirements for degrees, description of courses open to graduate students, and other matters not covered here, inquiries should be directed to the Dean of the Graduate School. The Graduate School issues its own bulletin which may be obtained upon request to the Office of the Graduate School.

Description of Courses

EXPLANATION OF ARRANGEMENT

The title of the course is given in small capital letters; the arabic numeral designates the particular course. Odd numerals indicate courses normally offered in the first semester; even numerals indicate courses normally offered in the second semester. Arabic numerals enclosed in parentheses indicate that a course is repeated in the semester following. Thus course 1 (1) is offered in the first semester and is repeated in the second semester.

Every course is assigned to one of 22 examination groups. As all courses in the same examination group have their final examination at the same time, a student may not register for two courses with the same examination number. Courses with examination group number 0 have no final examination, so that more than one course in this group may be scheduled by a student. For the examination group number of each course, see the time and room schedule on page 215.

Courses numbered 1-50 cannot be counted for graduate credit. Courses numbered 50-100 are for Juniors, Seniors, and Graduate Students. They are not open to Freshmen and Sophomores.

Following the title is the course description and the name of the instructor. The next section gives the following information in the order indicated: (1) prerequisites, if any; (2) the number of hours of recitations or laboratory periods required each week; (3) the number of semester credits the course will count in the total required for graduation. Lectures and recitations are fifty minute in length. Laboratory periods are usually two and one-half hours in length.

Abbreviations have been employed to indicate the number of hours of work required of students in lecture, recitation, and laboratory, and the number of credits given for satisfactory completion of each course. The abbreviations should be interpreted as follows:

Cr.	Semester hour credit
Lab.	Laboratory
Lec.	Lecture
Prereq.	Prerequisite
Rec.	Recitation

All courses (unless otherwise marked) are open to students who have passed the prerequisites.

An elective course will be given only when there is a minimum of five students registered.

If the numerals designating a course running through both semesters are connected by a hyphen, the first semester, or its equivalent, is a prerequisite for the second semester. If the numerals are separated by a comma, properly qualified students may take the second semester without having had the first.

Students must register for the number of credits or within the range of credits shown in the Catalogue description of a course.

AGRICULTURE

A grouping of non-departmental courses

DEAN'S OFFICE, COLLEGE OF AGRICULTURE

1. ORIENTATION. A non-departmental course offering an opportunity to discuss matters not ordinarily reviewed in other courses of instruction. Attention will be given to selected student rules and regulations, scholarships, campus organizations and facilities, opportunities in agriculture as a science, and to programs of study. Also, federal aid as related to land-grant colleges and universities will be discussed. Mr. Richards. Required of first-semester Freshmen in Agriculture, Forestry, and Home Economics. 1 lec.; 1 cr.

COOPERATIVE EXTENSION SERVICE

3. PRINCIPLES OF COOPERATIVE EXTENSION WORK. The development, legal basis, description of projects and operations of field staffs, methods of influencing people through meetings, demonstrations, publicity, radio, and visual aids. Mr. Hoitt and other members of the staff of Agriculture and Home Economics Extension Service. Open to Juniors and Seniors in Agriculture and Home Economics by permission of the instructor. (Alternate years; offered in 1954-1955.) 2 lec.; 2 cr.

4. EXTENSION FIELD WORK. A limited number of general Agricultural and Home Economics students may be permitted to do some supervised Extension work under the immediate direction of a member of the staff of Agriculture and Home Economics Extension Service. This may be taken during the second semester of the Junior or Senior Year. In some cases arrangements may be made for supervised work during summer vacation period. Preference may be given to students who have taken Agriculture 3. Mr. Hoitt. 2 to 6 cr.

AGRICULTURAL EDUCATION

89-90. METHODS OF TEACHING FARM MECHANICS IN VOCATIONAL AGRICULTURE. This course deals with the organization and presentation of farm mechanics subject-matter, supervision and direction of farm mechanics projects, and the preparation and presentation of demonstrations. The first semester deals with fundamental farm mechanics skills and the second semester with farm machinery maintenance and operational techniques of instruction. Mr. Gilman. Required of majors in Teacher Preparation Curriculum. 1 lab.; 1 cr.

91-92. PROBLEMS IN TEACHING VOCATIONAL AGRICULTURE. The course will cover in considerable detail the following topics: the vocational point of view, building the course of study in agriculture, providing teaching facilities, planning the lesson, and planning supervised farming programs, Future Farmers of America, young farmer programs, adult farmer programs, and miscellaneous activities of the teacher of Agriculture. Mr. Barton. Required of Juniors or Seniors in Teacher Preparation Curriculum. 2 lec.; 1 lab.; 3 cr.

93. SUPERVISED TEACHING IN HIGH-SCHOOL AGRICULTURE. This course provides the trainee with the opportunity for obtaining participating experiences in teaching Vocational Agriculture. The work is carried on in a well-organized department of Vocational Agriculture under the guidance of a critic-teacher. The enrollee is required to assume the duties and responsibilities expected of the regular teacher of agriculture before the work for the semester is concluded. Mr. Barton. 13 cr.

DESCRIPTION OF COURSES

ACCOUNTING

(*See Economics and Business Administration*)

AGRICULTURAL AND BIOLOGICAL CHEMISTRY

ARTHUR E. TEERI, *Associate Professor;* THOMAS G. PHILLIPS, *Professor;* STANLEY R. SHIMER, *Professor;* WARREN AVERILL, *Assistant Professor;* MARGARET E. LOUGHLIN, *Instructor.*

1. ORGANIC AND BIOLOGICAL CHEMISTRY. An introduction to Organic Chemistry and a brief survey of Biological Chemistry. Mr. Shimer, Miss Loughlin, Mr. Phillips, Mr. Averill. Prereq.: Chem. 2 or 4. 3 lec.; 2 lab.; 5 cr.

2. PLANT CHEMISTRY. The chemistry of plant growth. Mr. Phillips. Prereq.: Ag. Chem. 1 or its equivalent. 2 lec.; 1 lab.; 3 cr.

4. ANIMAL NUTRITION. The chemistry of animal nutrition. Mr. Shimer. Prereq.: Ag. Chem. 1 or its equivalent. 2 lec.; 1 lab.; 3 cr.

6. CHEMISTRY OF FOOD AND NUTRITION. The chemistry of food materials and of digestion, absorption, metabolism, and excretion. Mr. Averill. Prereq.: Ag. Chem. 1 or its equivalent. 2 lec.; 1 lab.; 3 cr.

51-52. PHYSIOLOGICAL CHEMISTRY. The chemistry of fats, carbohydrates, and proteins; colloids, enzyme action, digestion, metabolism, and excretion. The qualitative and quantitative examination of blood and urine. Mr. Shimer, Mr. Teeri. Prereq.: Satisfactory preparation in Organic Chemistry and Quantitative Analysis. 3 lec.; 2 lab.; 5 cr. Under special conditions a student may register for the lectures in this course (3 cr.) after obtaining the consent of the instructor and the approval of the Dean of the college.

53-54. AGRICULTURAL ANALYSIS. A study of the methods of analysis of soils, fertilizers, feeding stuffs, and other products important in Agriculture. Mr. Teeri and staff. Prereq.: Satisfactory preparation in Organic Chemistry and Quantitative Analysis. 1 lec.; 3 lab.; 4 cr.

56. PHYSIOLOGICAL CHEMISTRY. The qualitative and quantitative methods fundamental to medical diagnostic work. The chemistry of fats, carbohydrates, and proteins; enzyme action, digestion, metabolism, and excretion. Mr. Teeri. Prereq.: Satisfactory preparation in Organic Chemistry. 3 lec.; 2 lab.; 5 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

AGRICULTURAL ECONOMICS

WILLIAM F. HENRY, *Professor;* W. KEITH BURKETT, *Associate Professor;* JAMES R. BOWRING, *Associate Professor.*

12. ECONOMICS OF THE AGRICULTURAL INDUSTRY. Production and distribution problems of the agricultural industry, the nature of farming costs, agricultural prices, farm credit, land utilization, Federal and State action programs, and agricultural policy. Mr. Henry. Prereq.: Econ. 1. 3 lec.; 3 cr.

14. FARM MANAGEMENT. Principles of managing farms for maximum income — including: methods of making management decisions; enterprise selection and resource combination; adjustment to prices; management of land, labor, and equipment; obtaining capital; farm planning; records and analysis of performance. The principles are applied to several kinds of farms

through examples, laboratory problems, and farm visits. Mr. Burkett. Elective for Juniors and Seniors. 3 lec.; 1 lab.; 4 cr.

34. Economics of Consumption. The significance of consumer spending and income to the economy. Market facilities and services in the distribution of food. Factors influencing consumer choice, including prices, price reporting, and grades and standards. Changing food needs and their relation to production and marketing problems. Mr. Bowring. 3 lec.; 3 cr.

51. Cooperative Business. Stress is placed on the organizational, legal and financial problems of farmers' business corporations engaged in buying and selling. Selected problems of general agricultural marketing are integrated with the course content. Elective for Juniors and Seniors. Mr. Henry. 3 lec. 3 cr.

54. Agricultural Finance. The capital needs of different kinds of farms and farmer organizations. Saving, credit, renting, partnerships, and other means of obtaining capital. Organization, practices, and problems of credit institutions serving agriculture. The valuation and appraisal of farm property. Mr. Burkett. Prereq.: Agricultural Economics 14 or concurrently. 2 lec. 2 cr. (Alternate years; not offered in 1954-1955.)

55. Agricultural Marketing. The structure responsible for the distribution of agricultural products will be reviewed. Emphasis will be placed on the theory of price determination, interregional trade, imperfect competition, and public and private administration of prices in agriculture. Mr. Bowring. 3 lec.; 3 cr.

60. Agricultural Policy. Public policies concerning land utilization, conservation of soil and forest resources, price supports, and production control will be studied and appraised. The objectives and effects of various action programs will be noted. Mr. Bowring. Prereq.: Agr. Econ. 12. 3 lec.; 3 cr.

67, 68. Special Problems. Special assignments in reading and problems to satisfy students' needs. Mr. Henry, Mr. Burkett, and Mr. Bowring. Prereq.: special permission. 1 to 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

AGRICULTURAL ENGINEERING

Robert S. Palmer, *Assistant Professor;* Paul A. Gilman, *Associate Professor of Farm Mechanics, Thompson School of Agriculture*

2. Housing and Home Equipment. The considerations involved in building or buying a home to fit one's needs, desires, and activities; accompanied by a study of mechanical and electrical equipment for the home as a guide to the purchaser. Lectures and demonstrations will be supplemented by field trips and laboratory exercise. 2 1-hour periods; 1 2-hour period; 3 cr.

15. Agricultural Engineering Shop. Designed to give the engineering student an appreciation of the problems of manufacturing and repair. Practice in oxy-acetyline and electric arc welding, machining and cold metal work, soldering, pipe fitting, and the care and use of woodworking tools. The Staff and Mr. Gilman. Registration limited to Agricultural Engineering students. 1 3-hour lab.; 1 cr.

17, 18. Farm Shop. Primarily for teacher-training students. The selection, care and use of tools needed for modern farm operation and maintenance, with practice in basic tool operations. The development of skills in handling tools for maintenance and construction work on the farm. Mr. Gilman. 2 labs.; 2 cr.

Note: Courses 21 through 30 are not open to Agricultural Engineering majors or Technology students.

21. Soil and Water Conservation. Elementary surveying and its application to practical agricultural problems; the design and layout of drainage, erosion control, and irrigation systems. Prereq.: Math. 13. 1 lec.; 1 3-hr. lab.; 2 cr.

22. Farm Power. A study of engines and electric motors in farm work and how they may be used to the best advantage. Prereq.: Math. 13 and Phys. 1. 1 lec.; 1 2-hr. lab.; 2 cr.

23. Farm Machinery. A study of the mechanism of agricultural production machinery; selection, care, performance, and use. Prereq.: Math. 13 and Phys. 1. 1 lec.; 1 2-hr. lab.; 2 cr.

24. Farm Structures. Problems in planning and designing agricultural structures, estimating materials and costs, discussion of preliminary considerations for various types of structures. Prereq.: Math. 13. 1 lec.; 1 2-hr. lab.; 2 cr.

Note: Courses 31 through 40 are open only for Agricultural Engineering majors and Technology students.

31. Soil and Water Engineering. A study of the hydrologic, soil, vegetal, and stream flow factors involved in the design and operation of erosion control structures, drainage systems, and irrigation systems. Prereq.: C.E. 23. 2 lec.; 1 lab.; 3 cr.

33. Farm Power and Machinery. The design and operation of farm implements and tractors. A study of tractor power units, chassis mechanics, tractor tests, and performance; the capacity and power requirements of farm implements. Prereq.: M.E. 8; M.E. 23. 2 lec.; 1 lab.; 3 cr.

34. Agricultural Structures. The functional planning and structural design of farm buildings and residences; problems arising from the physiological processes of animals and crops. Prereq.: M.E. 8; M.E. 24. 2 lec.; 1 lab.; 3 cr.

(35). Rural Electrification. The utilization of electrical energy on farms for power, illumination, and temperature control, including the study of equipment used in crop processing, water systems, materials handling, and the design of a farmstead wiring system. Prereq.: E.E. 33. 2 lec.; 1 lab.; 3 cr.

(40), 40. Problem-Seminar. Preparation and presentation of solutions to problems related to agricultural engineering. A review of technical literature emphasizing current research. Prereq.: concurrent enrollment in Agricultural Engineering 31, 33, 34 or (35).

41, 42. Special Problems. Guided but independent activities in special areas of agricultural engineering by students capable of self-direction. Prereq.: Senior standing. 1-3 cr.; time to be arranged.

AGRONOMY

ROY L. DONAHUE, *Professor;* FORD S. PRINCE, *Professor;* LEROY J. HIGGINS, *Associate Professor;* LOUIS T. KARDOS, *Associate Professor;* GERALD M. DUNN, *Assistant Professor;* SCOTT MILLER, *Assistant Professor.*

11. INTRODUCTORY SOILS. A study of physical, chemical, and biological properties of soils in relation to plant growth. Mr. Donahue. 3 lec.; 1 lab.; 4 cr.

14. FERTILIZERS AND SOIL FERTILITY. The manufacture and use of fertilizers, the production, composition, and care of farm manures, and their relation to crop response and soil fertility. Mr. Donahue. Prereq.: Agron. 11 and 21. 3 lec.; 3 cr.

21. CROP PRODUCTION. The production, distribution, cultural practices, improvement, and uses of field crops such as forage, grain, and tuber crops. Mr. Higgins. 2 lec.; 1 lab.; 3 cr.

24. CEREAL AND OTHER GRAIN CROPS. A study of the characteristics and production of corn, oats, barley, rye, and other feed and grain crops. Mr. Higgins. Prereq.: Agron. 11, 14, and 21, or permission of instructor. 2 lec.; 1 lab.; 3 cr. (Alternate years; offered in 1954-1955.)

25. SEED TESTING. The identification of seeds and a study of the techniques used in official methods of sampling and analyzing agricultural seeds for purity and germination. Mrs. Sanborn, Seed Analyst. Prereq.: Bot. 1 and permission of instructor. 1 lab.; 1 cr.

26. POTATOES AND OTHER CASH CROPS. A study of the characteristics and production of potatoes, field beans, sweet corn, and other cash crops. Mr. Higgins. Prereq.: Agron. 11, 14, and 21, or permission of instructor. 2 lec.; 1 lab.; 3 cr. (Alternate years; not offered in 1954-1955.)

28. FORAGE AND PASTURE CROPS. A study of the grasses and legumes used as hay, pasture and silage, and the methods of handling these crops for maximum yield of high quality forage. Mr. Higgins. Prereq.: Agron. 11, 14, and 21, or permission of instructor. 2 lec.; 1 lab.; 3 cr.

51. PASTURE-HAYLAND AND TURF MANAGEMENT. The choice of species, and the preparation and maintenance of stands and swards through adequate management and fertilization. Consideration also will be given to lawns and turf areas. Current research literature, individual problems, and field trips will be utilized. Mr. Higgins. Prereq.: Agron. 11, 14, 21, and 28, or permission of the instructor. 2 lec.; 1 lab.; 3 cr.

57. SOIL PHYSICS. Physical properties of soils; their measurement and relation to structure, water movement, aeration and temperature. Mr. Miller. Prereq.: Agron. 11, 14, and Phys. 1. 2 lec.; 1 lab.; 3 cr. (Alternate years; not offered in 1954-1955.)

58. SOIL CLASSIFICATION AND MAPPING. The origin, morphology, classification, and mapping of soils. Relationships of the great soil groups of the world to crop production. Special emphasis is given to the soils of New Hampshire. Mr. Kardos. Prereq.: Agron. 11, Geol. 1 or 7. 2 lec.; 1 lab.; 3 cr. (Alternate years; not offered in 1954-1955.)

59. SOIL CHEMISTRY. A study of the methods of evaluating nutrient levels in soils and of principles underlving the liberation, absorption, and fixation of nutrient elements in soils. Mr. Kardos. Prereq.: Ag. Chem. 1, and Agon. 11, 14. 2 lec.; 1 lab.; 3 cr. (Alternate years; offered in 1954-1955.)

60. Soil Conservation. The causes and effects of soil erosion. Cropping systems, fertilizer practices and structural devices used in erosion control. Mr. Kardos. Prereq.: Agron. 11, 14, 21. 2 lec.; 1 lab.; 3 cr. (Alternate years; offered in 1954-1955.)

62. Plant Breeding of Field Crops. A study of the methods for developing and evaluating improved varieties of grasses, legumes, and cereal crops. Major emphasis will be given to methods of corn breeding. Basic genetic principles will be reviewed. Laboratory to consist of field trips, practical work in selfing and crossing, and studies of inheritance. In addition, field plot designs and their statistical analyses will be studied. Mr. Dunn. Prereq.: Zool. 61. 2 lec.; 1 lab.; 3 cr.

71, 72. Agronomy Seminar. Library and reference work on special phases of soil and crop problems. Practice in looking up literature and in preparation of reports and abstracts. Staff. Prereq.: Agron. 11, 14, 21. Elective for Seniors. 1 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

ANIMAL HUSBANDRY

Loring V. Tirrell, *Professor;* Fred E. Allen, *Associate Professor;* Gerald L. Smith, *Assistant Professor.*

2. Types and Market Classes of Livestock. Origin, history, development, characteristics, and adaptability of the different types of horses, cattle, sheep, and swine, with practice in judging. Mr. Tirrell. 2 lec.; 1 lab.; 3 cr.

11. Livestock Judging. The principles and practice of judging horses, beef cattle, sheep, and swine. It includes trips to some of the best New England breeding establishments and is required of candidates for judging teams. Mr. Tirrell and Mr. Smith. 1 lab.; 1 cr.

13. Feeds and Feeding. The character, composition, and digestibility of feed stuffs and the principles and methods of feeding different kinds of farm animals. Mr. Tirrell. 3 lec.; 3 cr.

14. Advanced Livestock Judging. A continuation of Animal Husbandry 11. It serves as a basis for the selection of a livestock team for competition such as held at the Eastern States Exposition and the International at Chicago. Mr. Tirrell and Mr. Smith. Prereq.: A.H. 11. 1 lab.; 1 cr.

15. Systematic Anatomy. The general anatomy and physiology of domestic animals. Mr. Allen. 3 lec.; 3 cr.

16. Animal Diseases. The prevention, control, and treatment of the bacterial and parasitic diseases of domestic animals. Mr. Allen. Prereq.: A.H. 15. 3 lec.; 3 cr.

18. Meat and Its Products; Livestock Markets. A study of meat, farm slaughter, curing and identification of cuts, livestock markets, stockyards, and transportation, with occasional trips to slaughter houses and packing plants. Mr. Smith. 1 lec.; 1 lab.; 2 cr.

19. Management of Horses and Beef Cattle. Selection, feeding, breeding, management, and preparation for the show ring of horses and beef cattle with special reference to New England conditions. Mr. Tirrell. 2 lec.; 1 lab.; 3 cr.

20. Sheep and Swine Husbandry. Selection, breeding, feeding, management, and preparation for the show ring of sheep and swine, with special reference to New England conditions. Mr. Tirrell. 2 lec.; 1 lab.; 3 cr.

21. Light Horse Husbandry. Origin, history, development, judging, selection, feeding, breeding, and management of light horses. Special emphasis will be placed upon saddle-horse selection, the show ring classes, and judging. Horse show management will be discussed. Mr. Tirrell and Mr. Smith. 1 lec.; 1 lab.; 2 cr.

51. Animal Breeding. The principles and practices of breeding farm animals including cross-breeding, in-breeding, selection, inheritance, breed analysis, reproductive efficiency, fertility, and sterility. Mr. Smith. 3 lec.; 3 cr.

52. Animal Husbandry Seminar. Library and reference work and preparation of papers on various Animal Husbandry subjects of timely importance. Mr. Tirrell and Mr. Smith. 1 to 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

THE ARTS

George R. Thomas, *Professor;* Edwin Scheier, *Associate Professor;* Wesley F. Brett, *Assistant Professor;* John W. Hatch, *Assistant Professor;* Richard D. Merritt, *Assistant Professor;* Esther S. Drew, *Assistant Professor;* Lorna Pearson Watson, *Instructor;* Karl J. Moehl, *Instructor;* Alec W. Finlayson, *Instructor;* Herbert S. Lourie, *Visiting Lecturer;* Mary H. Goodrich, *Assistant*

Visiting Lecturers in Clinical Subjects

Miss Marguerite Abbott, B.S., O.T.R., *Disability Evaluation;* John A. MacDonald, B.Sc., M.D., C.M., *Medical Terminology, General, and Tuberculosis Conditions;* Gerhard S. Nothmann, M.D., *Psychiatry;* Thomas F. Reid, M.D., C.M., *Ophthalmology and Otology;* Gerald Shattuck, M.D., *Pediatrics;* David K. Webster, B.S., M.D., *Physical Disabilities;* Lester R. Whitaker, M.D., *Surgical Conditions.*

Supervisors in Clinical Practice

Miss Marilyn Bacheller, Miss Margaret Blodgett, Mrs. Charlotte Briggs, Mrs. Margery Button, Mrs. Irma Cohen, Miss Eileen Dixey, Mrs. Mary Golden, Miss Inez Huntting, Miss Janet Kistler, Miss Ruth McCrum, Miss Arden Nelson, Miss Gladys Pattee, Miss Ruth Rumsey, Mrs. Dorothy Sebesta, Miss Gertrude Shattuck, Miss Elizabeth Smedes, Miss Charlotte Smith, Miss Florence Stattel, Miss Charlotte Steitz, Miss Viola Svensson, Mrs. Helen White.

Student Workshop. An experimental arts laboratory located in Hewitt Hall, open to any student in the University, whether or not enrolled in arts courses. Equipped with woodworking tools and machinery, printing-presses, silk screen printing equipment, air brush, facilities for block printing, model making, repairing of skis and other sports equipment, wood carving, plastics, and other hobby interests. Supervised by Mr. Brett.

DESCRIPTION OF COURSES

GENERAL COURSES IN THE ARTS

All laboratory courses listed in this section are limited in enrollment. Students should consult the instructor in charge before registering.

In those courses where the students retain finished products, they pay the costs of materials used. The Department of The Arts reserves the right to retain for exhibition purposes two examples of each student's work in each class of instruction.

Students are responsible in the care of shops, studios, and all equipment therein; damage resulting through negligence or carelessness will be the responsibility of the student. Tools and other equipment will not be used until instruction in their use is given by the member of the staff in charge.

Unless otherwise authorized by the instructor, projects not a part of the instructional program will be excluded from the studios.

3. CRAFTS. A course offering opportunities to become acquainted with work in leather, metal tooling, chip carving and other crafts which require little special equipment and which may be carried on in elementary and secondary schools. Covers design, methods of teaching each craft, sources of materials and tools, and current literature. Mrs. Watson. For Art-Education students; also, elective by permission. 2 lab.; 2 cr.

4. CRAFTS. Craft activities for summer camps, playgrounds, settlement and scout groups. Experience in design and construction in leather, paper, wood, textiles, scrap, and native materials. Special emphasis on methods of teaching and using crafts in camp handcraft programs, sources of materials and tools, and current literature. Mrs. Watson. For Recreation, Physical Education, and Social Service students; also, elective by permission. 2 lab.; 2 cr.

5, (5). JEWELRY AND METALWORK. Structural and decorative design and construction in various metals, such as pewter, copper, and silver. This course may be repeated, in which case advanced projects will be assigned. *This course may be taken for credit no more than four times.* Mrs. Watson. Elective by permission. 2 lab.; 2 cr.

6. WEAVING. Fundamentals of weaving: warping, threading, basic weaves, patterns. Projects include place mats, scarves, bags, rugs, etc. This course may be repeated, in which case advanced projects will be assigned. *This course may be taken for credit no more than four times.* Mrs. Watson. Elective by permission. 2 lab.; 2 cr.

8. TEXTILE DESIGN. Original creative design in stenciling, block printing, silk screen printing. This course may be repeated, in which case advanced projects will be assigned. *This course may be taken for credit no more than four times.* Mrs. Watson. Elective by permission. 2 lab.; 2 cr.

11, (11). MODELING. Modeling in relief and the round figure. An introduction to ceramic sculpture and to the processes of casting in plaster and papier-mache. Mr. Scheier. 2 lab.; 2 cr. (Not offered in Fall Semester 1954-1955.)

15, 16. CERAMICS (Pottery). Design and construction. Studio practice in throwing, casting, modeling, decorating, glazing, and firing of pottery, tiles, and figures. Modeling in ceramic clay and plasticine. Study of casting problems. Mr. Scheier. 2-3 lab.; 2-3 cr. (Not offered in Fall Semester 1954-1955.)

17, 18. Ceramics (Pottery). A further study of design and construction with emphasis on decoration and the preparation and application of glazes. Mr. Scheier. Prereq.: Arts 15, 16. 2-3 lab.; 2-3 cr. (Not offered in Fall Semester 1954-1955.)

20. Elementary Drafting. Elementary drafting procedures, including lettering and use of instruments. Study of architectural symbols. Interpretation of typical hotel plans and statistical data by graphical representation. Mr. Thomas. *For Hotel Administration students, elective by permission only.* 2 lab.; 2 cr.

23, (23). Basic Design. A basic course in the structural and expressive use of the elements of design as a background for crafts, ceramics, drawing and painting, and commercial design. Mr. Hatch, Mr. Moehl, and Mr. Lourie. 2 lab.; 2 cr.

24. Drawing and Design. A continuation of Arts 23 with problems in three dimensional design and drawing from the model and from nature. Mr. Hatch and Mr. Moehl. Prereq.: Arts 23. 2 lab.; 2 cr.

25, 26. Advanced Drawing and Painting. An introduction to oil painting, and experience with various other media, i.e., charcoal, pen and ink, pastel, watercolor. Composition, means of form description, and theories of color are presented in studio exercises, figure drawing, and outdoor sketching. Mr. Hatch. Elective by permission only. 2-3 lab.; 2-3 cr.

27. Graphic Arts. Expression and experimentation in a variety of graphic techniques, i.e., linoleum and wood block printing, serigraphy, etc., in black and white and color. Mr. Moehl. Prereq.: Arts 23. Elective by permission only. 2-3 lab.; 2-3 cr. (Alternate years; offered in 1954-1955.)

28. Commercial Design. Various lettering techniques and styles leading toward commercial layout, poster, and advertising design. Mr. Moehl. Prereq.: Arts 23. Elective by permission only. 2-3 lab.; 2-3 cr. (Alternate years; offered in 1954-1955.)

29, 30. Advanced Painting and Composition. An extension of Arts 25 and 26, stressing further development in the various media. Figure study and outdoor sketching also will be offered. This course may be taken a second time with emphasis on the particular need of the individual. Mr. Hatch. Elective by permission only. Credits to be arranged. (Alternate years; not offered in 1954-1955.)

31, 32. Introduction to the Arts. A broad historical survey of man's creative efforts in their relation to contemporary cultural and social movements, presented as a background for interpreting the place of the arts in individual and community life of today. Illustrated lectures with assigned readings. Mr. Thomas. For Sophomores, Juniors, and Seniors. 3 lec.; 3 cr.

35, (35). Stagecraft. The theory and practice of the technical phases of play production, including a study of the design and methods of execution of scenery and lighting. Practice in planning, designing, constructing, painting, and lighting of scenery; practical experience in the handling of properties, manipulations of scenery, lighting and mechanical effects. Mr. Finlayson. 1 lec. or rec.; 1 lab.; 2 cr.

39, (39). Elementary Photography. The theory and technique of photography, covering camera operation, developing, printing, and enlarging. Projects stress imaginative solution to portrait, advertising, illustrative, and campus life assignments. Mr. Merritt. Open to Sophomores, Juniors, and Seniors with permission of the instructor. 1 lec.; 2 lab.; 3 cr. (The cost of materials will approximate $7.50.)

40. Advanced Photography. The basic theory and practice of color photography. Advanced projects in black and white. Techniques of creative photography including studio and laboratory controls. A portfolio of photographs, representative of the students' progress, will be required. Mr. Merritt. Permission of the instructor. 1 rec.; 1 lab.; 3 cr. (The cost of materials will aproximate $10.50.) (Alternate years; not offered in 1954-1955.)

83. Classic and Oriental Art. The classic development of Greece and Rome will be contrasted with the art of the Far East, especially China, using the common basis of East and West in primitive art as the starting point. Influence of these arts on contemporary work will be stressed. Illustrated lectures with assigned readings. Mr. Hatch. For Juniors and Seniors. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

85. The Art of the Renaissance, A historic survey of the achievements of Western civilization in sculpture, painting, and architecture from the Gothic cathedral to the 18th century drawing room. Illustrated lectures with assigned readings. Mr. Hatch. For Juniors and Seniors. 3 lec.; 3 cr. (Alternate years; offered in 1954-1955.) *Not available for credit to those who have completed Arts 33.*

88. Modern Art. From Louis XVI to Picasso; traces the history of painting through the various revolutions, political and aesthetic, that resulted in the many schools of thought prevalent in 19th and 20th century art; *i.e.*, classicism, impressionism, cubism, etc. Illustrated lectures with assigned readings. Mr. Hatch. For Juniors and Seniors. 3 lec.; 3 cr. (*Formerly Arts 34.*)

99, (99). Problems in the Visual Arts. Advanced students may select a special problem in one of the visual arts in which they have exhibited proficiency, to be developed by means of conferences and studio work. Mr. Thomas and staff. Prereq.: Permission of department chairman. Credits to be arranged. This course may be repeated to a total of not more than 6 credits.

Art-Education (Art-Ed.) 91. Problems of Teaching Art in Elementary Schools. The purposes and objectives of teaching art in elementary schools; selection and organization of teaching material; teaching techniques which may be advantageously employed in the elementary schools. Mr. Thomas. Open only to Juniors and Seniors in the Art-Education Curriculum. Prereq.: Educ. 58 with grade of C or better. 2 rec.; 1 lab.; 3 cr.

Art-Education (Art-Ed.) (92). Problems of Teaching Art in Secondary Schools. The purposes and objectives of teaching art in the secondary schools; selection and organization of teaching material; teaching techniques which may be advantageously employed in the secondary-school art program. Mr. Thomas. Open only to Juniors and Seniors in the Art-Education Curriculum. Prereq.: Educ. 58 with a grade of C or better. 2 rec.; 1 lab.; 3 cr.

Education-Art (Ed.-Art) 94. Supervised Teaching in Secondary School Art. Prereq.: Art.-Ed. 92. One semester of Supervised Teaching. 14 cr.

Selection from the following courses offered by several departments within the University may, with the consent of the Chairman of the Department and the College Dean, be counted toward a major program in the Arts.

Costume Design and Fashion Illustration. See Home Economics
Domestic Architecture. See Building Construction
Elementary Landscape Gardening. See Horticulture
Floral Arrangement. See Horticulture
History of Costume. See Home Economics
Home Decoration. See Home Economics
Interior Decoration. See Home Economics
Principles of Clothing Construction. See Home Economics
Textiles. See Home Economics
Textiles and Furniture. See Home Economics

For courses in Music, Dramatic Art, and Dancing, see Departments of Music, English, Physical Education for Women.

The Department promotes on the campus a series of exhibitions and lectures treating The Arts. Visits to near-by museums and points of interest are arranged from time to time, and published lists of these visits are available. The following are a few of the art centers within a convenient radius of Durham: Addison Gallery of American Art, Currier Gallery of Art, and several excellent museums and galleries in Boston, including the Boston Museum of Fine Arts, the Gardner Museum, the Fogg Museum at Harvard University, and the Institute of Contemporary Art.

BACTERIOLOGY

Lawrence W. Slanetz, *Professor;* Clara H. Bartley, *Assistant Professor;* Edward Katz, *Assistant Professor*

1. General Bacteriology. Principles of bacteriology; morphology, physiology, and classification of bacteria and other microorganisms, and their relationships to agriculture, industry, sanitation, and infectious diseases. Mr. Slanetz, Mrs. Bartley, and Mr. Katz. Prereq.: Chem. 1-2 or equivalent; 2 lec.; 2 lab.; 4 cr.

2. Food and Sanitary Bacteriology. Relation of microorganisms to food production; food preservation; food infections and intoxications; standard laboratory methods for the bacteriological examination of foods. Bacteriology and sanitation of water, sewage, air, and eating utensils. Disinfection and disinfectants. Mrs. Bartley. Prereq.: Bact. 1. 2 lec.; 2 lab.; 4 cr.

5. Public Health and Sanitation. A consideration of the nature and types of microbes causing infectious diseases; the prevalance, transmission, and control of these diseases. Sanitation of water, sewage, food, and air. Community hygiene and public health administration. Mr. Slanetz. Prereq.: Biol. 1-2, or consent of instructor. 3 lec. or demonstrations; 3 cr. *Formerly Bact. 4.*

6. Soil Bacteriology. Consideration will be given to the nature and types of bacteria and other microorganisms present in soil and to their activities in carrying out decomposition of plant and animal matter; their role in the nitrogen, carbon, and sulfur cycle in soil; their relationship to other soil inhabitants; and their contribution to soil fertility. Mr. Katz. Prereq.: Bact. 1, 2 lec.; 2 lab.; 4 cr. (Alternate years; not offered in 1954-1955.)

8. Pathogenic Bacteriology. A study of the morphological, cultural, biochemical, serological, and pathogenic characteristics of microorganisms causing human and animal diseases. Mr. Slanetz and Mrs. Bartley. Prereq.: Bact. 1. 2 lec.; 2 lab.; 4 cr.

53. Immunology and Serology. The theories of infection and immunity; production of vaccines, toxins, and antiserums; serological techniques for disease diagnosis and identification of bacteria, including agglutination, precipitin, and complement fixation tests. Mrs. Bartley. Prereq.: Bact. 8. 2 lec.; 2 lab.; 4 cr.

54. Industrial Microbiology. Consideration of the role of microorganisms important in industrial processes. Isolation and study of the bacteria, yeasts, molds, and actinomycetes used for the manufacture of industrial products. Discussion of the theoretical aspects of fermentation and respiration and their practical applications. Typical industrial processes employing microorganisms and chemical isolation of products will be carried out in the laboratory. Mr. Katz. Prereq.: Bact. 1 and Organic Chemistry. 2 lec.; 2 lab.; 4 cr. (Alternate years; offered in 1954-1955.)

55, 56. Problems in Bacteriology. Special problems, depending upon the training and desire of the student. Elective only upon consultation. Mr. Slanetz and members of the staff. Credits to be arranged.

57, 58. Bacteriology Seminar. Reports and discussions on current literature and recent developments in bacteriology. Mr. Slanetz and members of the staff. Prereq.: Bact. 2 or 8 and consent of the instructor. 1 2-hr. period; 1 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

BIOLOGY

1-2. Man and the Living World. This is a basic course in Biology, designed to give the student fundamental facts about himself and a broad understanding of his relation to the living world, both plant and animal, of which he is a part. This course is offered by the Division of Biological Science. It is supervised by a committee of the chairmen of the departments of Bacteriology, Botany, Entomology, and Zoology and the course chairman. Mr. Milne and Staff. 2 lec.; 1 rec.; 1 lab.; 4 cr. *This course cannot be used to satisfy major requirements.*

42. Field Biology and Nature Study. An introduction to nature study, with emphasis on the recognition of certain common plants and animals. The use of simple field keys designed for the layman will be included as part of the laboratory work. The avocational aspects of an acquaintance with living things in their natural environments will be stressed. This course is planned primarily for students in the Recreation option of the Physical Education Teacher Preparation Curriculum. Elective for others by permission of the chairman of the Department of Zoology. Prereq.: Biol. 2. 1 lec.; 2 lab.; 3 cr. *This course cannot be used to satisfy major requirements in Zoology or Botany.* (Alternate years; not offered in 1954-1955.)

61-62. Clinical Laboratory Methods. This is an 11-month course in Medical Technology taken at the Mary Hitchcock Memorial Hospital School of Medical Technology, Hanover, New Hampshire. The course starts on July

1, and includes lectures and laboratory work in Bacteriology, Blood Bank and Serology, Clinical Chemistry, Hematology, Laboratory Management and Ethics, Mycology, Parasitology, Histology, and Clinical Microscopy. Credits will be allowed when the University has received a transcript of the candidate's record and upon certification by the Director of the School and the Supervisor of the Medical Technology Curriculum that the work has been successfully completed. This course qualifies a candidate for the examination for the Medical Technologist's Certificate administered by the Registry of Medical Technologists of the American Society of Clinical Pathologists. 16 cr. *This course cannot be taken for graduate credit.*

BIOLOGY-EDUCATION (BIOL.-ED.) 91. PROBLEMS IN THE TEACHING OF HIGH-SCHOOL BIOLOGY. Objectives and methods of teaching. The selection and organization of materials; the preparation of visual aids; the setting up of aquaria and other projects. The use of the field trip as a tool in teaching high-school Biology. Mr. Moore. Prereq.: Two years of Biological Science and Educ. 58 with a grade of C or better. (See page 151.) 2 rec.; 1 lab. or field trip; 3 cr.

BIOLOGY-EDUCATION (BIOL.-ED.) 95. PROBLEMS IN THE TEACHING OF HIGH-SCHOOL BIOLOGY. Objectives and methods of teaching; the selection and organization of materials; the preparation of visual aids; the setting up of aquaria and other projects. Some instruction in the preparation of Biological materials for the classroom; instruction in making models and aquaria. The use of the field trip as a tool in teaching high-school biology. This course is acceptable as a substitute for Biology-Education 91; however, students who already have credit for Biology-Education 91 will not receive credit for this course. Prereq.: Either (1) Two years of Biological Science and Education 58; or (2) A year of teaching of high-school biology. 2 rec.; 2 lab. or field trip; 4 cr. (*Offered in Summer Session only.*)

EDUCATION-BIOLOGY (ED-BIOL) 93, 94. SUPERVISED TEACHING IN HIGH-SCHOOL BIOLOGY. (See Page 152.)

BOTANY

ALBION R. HODGDON, *Professor;* M. C. RICHARDS, *Professor;* STUART DUNN, *Associate Professor;* AVERY E. RICH, *Associate Professor;* CHARLOTTE G. NAST, *Associate Professor;* MARION E. MILLS, *Assistant Professor*

1. GENERAL BOTANY. The principal plant groups wtih emphasis on structure, function, and economic importance, stressing agricultural applications. Not open to students who have had Biology 1-2. Miss Mills. Required of Freshmen in Agriculture. 2 lec.; 2 lab.; 4 cr.

2. GENERAL BOTANY. A general survey of the entire plant kingdom with emphasis on development, reproduction, and evolutionary trends. Miss Mills. Prereq.: Bot. 1. 2 lec.; 2 lab.; 4 cr.

3. THE PLANT WORLD. The structure and function of plant parts. The application of basic biological principles to plant life. Students who have had Bot. 1 should not elect this course. Mr. Hodgdon. Prereq.: Biol. 1-2. 3 lec.; 1 lab.; 4 cr.

6. SYSTEMATIC BOTANY. The identification and classification of our native trees, shrubs. and wild flowers. Mr. Hodgdon. Prereq.: Biol. 1-2 or Bot. 1. 1 lec.; 2 lab.; 3 cr.

12. Morphology of the Vascular Plants. A study of the life histories of the Pteridophytes, Gymnosperms and Angiosperms, including comparisons of general structure and sexual organs. Miss Nast. Prereq.: Bot. 2 or Bot. 3. 2 lec.; 2 lab..; 4 cr. (Alternate years; not offered in 1954-1955.)

42. Plant Ecology. Plant life and its environment including a consideration of the principal environment factors such as light, temperature, soil, water, and biotic relations; study of associations, successions, and plant forms; a survey of plant distribution and underlying causes. Mr. Hodgdon. Prereq.: Bot. 1 or Biol. 1-2. 2 lec.; 1 lab.; 3 cr.

51. Plant Pathology. The nature of disease in plants, the etiology, symptomatology, and classification of plant diseases. Mr. Rich. Prereq.: Bot. 1 or Bot. 3. 1 lec.; 2 lab.; 3 cr.

52. Principles of Plant Disease Control. Exclusion, eradication, protection and immunization, and the specific, practical methods used to control plant diseases. Mr. Rich. Prereq.: Bot. 1 or Bot. 3. 1 lec.; 2 labs.; 3 cr. (Alternate years; not offered in 1954-1955.)

53. Plant Anatomy and Cytology. The anatomy of vascular plants with special emphasis upon tissue development and structure. Includes a brief study of cytological phenomena. Miss Nast. Prereq.: Bot. 1 or Bot. 3. 1 lec.; 2 lab.; 3 cr.

55. Advanced Systematic Botany. The principles and laws of plant classification and nomenclature; study of plant families, field and herbarium work. Mr. Hodgdon. Prereq.: Bot. 6. Hours to be arranged. 4 cr.

56. Plant Physiology. Structure and properties of the cell; absorption and movement of water; metabolism; growth and irritability. Mr. Dunn. Prereq.: Bot. 1 or Bot. 3, and one year of Chemistry. 2 lec.; 2 lab.; 4 cr.

57, 58. Problems in (a) Systematic Botany, (b) Plant Physiology, (c) Plant Pathology, (d) Plant Anatomy, Morphology, and Cytology, and (e) Plant Ecology. Elective only upon consultation with Chairman of Department. Mr. Hodgdon, Mr. Dunn, Mr. Rich, and Miss Nast. Hours to be arranged. 2 to 6 credits.

BUILDING CONSTRUCTION

E. T. Huddleston, *Professor of Architecture*
Register the following courses as: B-CE 11, 12, etc.

11-12. Domestic Architecture. A comprehensive view of the architectural profession and the building construction industry to the end that the relationships of the architect, engineer, contractor, materials producer, and client may be better understood. A brief history of domestic architecture with special emphasis on early American housing, and its present-day influence. The solution of modern housing problems to develop the relation of the house plan to family requirements, individual site, garden, accessory buildings, and the community. B-CE 11: 2 rec.; 2 cr. B-CE 12: 1 rec.; 1 lab.; 2 cr. Elective by permission of instructor.

21-22. Building Construction. Basic modern building materials and their use in the construction of walls, columns, floors, roofs, doors, windows, etc., illustrating their varied application to contemporary architectural usage. Principles of structural design and an analysis of structural systems as applied to wood frame house, light and heavy timber, steel and reinforced concrete construction. The relation of structural systems in the solution of various types of building problems with special emphasis given to building code requirements for safety. B-CE 21: 3 rec.; 3 cr. B-CE 22: 2 rec.; 1 lab.; 3 cr. Elective by permission of instructor.

31, 32. Professional Practices. The personal, ethical, business, and legal relations of the architect and consulting engineers with clients, contractors, etc. Procedure in the conduct of an architect's office with the preparation of complete contract documents for an assigned construction job, including advertisment, bond, form of proposal, information for bidders, agreement form, and general conditions covering the operational relations of the various parties to the contract. The fundamentals of specification writing and methods of estimating and appraising buildings. 3 rec.; 3 cr. Elective by permission of instructor.

BUSINESS ADMINISTRATION

(*See Ecnomics and Business Administration*)

CHEMICAL ENGINEERING

Oswald T. Zimmerman, *Professor;* Irvin Lavine, *Professor*

12. Engineering Materials The properties and uses of the principal engineering materials, including ferrous and non-ferrous metals and alloys, ceramics, glass, cements, wood, and plastics. Mr. Zimmerman. 2 lec.; 2 cr.

41. Process Engineering Principles. A study of chemical processes from the point of view of energy and material balances. The laboratory work involves a study of fuels and combustion, and the testing of fuels and related materials. Mr. Lavine. Prereq.: Chem. 22. 3 lec.; 2 lab.; 5 cr.

71-72. Unit Processes. The important inorganic and organic industrial chemical processes foom the point of view of the basic chemical reactions and physical operations involved. Mr. Lavine. Prereq.: Chem. 22. 2 lec.; 2 cr.

74-75. Unit Operations. The theory and practice of the fundamental chemical engineering unit operations, including flow of liquids, flow of heat, evaporation, distillation, drying, filtration, gas absorption, extraction, humidification and air conditioning, crystallization, crushing and grinding, and size separation. Mr. Zimmerman. Prereq.: Ch.E. 71, Chem. 83. 3 lec.; 3 cr.

76. Chemical Engineering Economics. The economic factors involved in industrial chemical processes and the application of economic balances to the design and selection of chemical engineering equipment. Mr. Zimmerman. Prereq.: Ch. E. 75, 77. 3 lec.; 3 cr.

77. Unit Operations Laboratory. Experiments based upon the unit operations are performed on typical chemical engineering equipment. Mr. Lavine. Prereq.: Ch. E. 74 and Chem. 84. 3 lab.; 3 cr.

78. Chemical Plant Design. The design and layout of chemical plants and equipment. The assigned problems are of a practical nature, such as the manufacture of some chemical product, and their solution will include the design or selection of all equipment and drawings of equipment, plant, and layout. Mr. Lavine. Prereq.: Ch. E. 75, 77. 3 lab.; 3 cr.

79. Chemical Engineering Thermodynamics. A study of the fundamental laws of energy and their application to chemical engineering problems. Mr. Zimmerman Prereq.: Ch. E. 74 and Chem. 84. 2 lec.; 1 rec.; 3 cr.

80. Chemical Engineering Project. Each student selects a research problem which he carries out independently under Faculty supervision. Intensive study in both the library and the laboratory and a satisfactory thesis at the completion of the work are required. Mr. Zimmerman. Prereq.: Ch. E. 75, 77. 5 lab.; 5 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

CHEMISTRY

Harold A. Iddles, *Professor;* Albert F. Daggett, *Professor;* James A. Funkhouser, *Professor;* Helmut M. Haendler, *Professor;* Melvin M. Smith, *Associate Professor Emeritus;* Henry G. Kuivila, *Associate Professor;* Robert E. Lyle, Jr., *Associate Professor;* J. Kenneth O'Loane, *Assistant Professor;* Ben Millard, *Assistant Professor;* Charles M. Wheeler, *Assistant Professor;* Albert K. Sawyer, *Instructor;* Gloria G. Lyle, *Instructor;* Clarence L. Grant, *Instructor*

1-2. General Chemistry. A broad course in elementary Chemistry with many lecture demonstrations and some laboratory practice. Topics of interest to the professional student and of general interest are presented. For Agricultural and Home Economics students and as an elective. Mr. O'Loane, Mrs. Lyle, and assistants. 3 lec.; 1 lab.; 4 cr.

3-4. General Chemistry. The fundamental laws and conceptions of Chemistry, including a study of the nonmetals and metals and their compounds. The theoretical principles are illustrated by many lecture demonstrations, and the applications of Chemistry in the professions are explained. Mr. Iddles, Mr. Funkhouser, Mr. Wheeler, Mr. Sawyer, Mr. Grant, and assistants. For students who plan to take further courses in the Department of Chemistry. 2 lec.; 1 rec.; 1 lab.; 4 cr.

6. Inorganic Chemistry. A continuation of Chemistry 3 covering the fundamental laws and conceptions of Chemistry involved in a study of the nonmetals and metals, and their compounds. Mr. Iddles and assistants. Prereq.: Chem. 3, Math. 11, 13, and permission of instructor. 2 lec.; 1 rec.; 3 lab.; 6 cr.

17. Quantitative Analysis. An elementary course in quantitative analysis designed for those students desiring a brief terminal course in analytical chemistry. Mr. Daggett and assistants. Prereq.: Chem. 4. 2 lec.; 2 lab.; 4 cr.

21. Semimicro Qualitative Analysis. The fundamental theories of solutions as applied to the reactions of qualitative analysis. Problem work is required. The laboratory work uses the semimicro technique and provides ample experience in the analysis of simple and complex mixtures. For Chemistry majors. Mr. Haendler and assistants. Prereq.: Chem. 6 or permission of instructor. 2 lec.; 2 lab.; 4 cr.

22. Quantitative Analysis. The theory and laboratory technique of the more common determinations of gravimetric and volumetric analysis. Emphasis on the solution of problems. A comprehensive study of the more common analytical methods. Mr. Daggett and assistants. Prereq.: Chem. 21. 2 lec.; 3 labs.; 5 cr.

26-27. Introductory Qualitative and Quantitative Analysis. The course starts with a presentation of the theories of analytical chemistry with the laboratory work of the qualitative analysis conducted on a semimicro scale. In the second half of the course the theory, problems, and technique involved in some of the common procedures in both gravimetric and volumetric quantitative methods are presented. The course is planned for pre-medical students. Mr. Daggett, Mr. Haendler, and assistants. Prereq.: Chem. 4. 2 lec.; 2 lab.; 4 cr.

31. TECHNICAL QUANTITATIVE ANALYSIS. The laboratory portion provides sufficient experience to develop the skill and special technique necessary for the analysis of alloys, gaseous, liquid, and solid fuels, gas mixtures, oils and lubricants. The lectures interpret the results of technical analyses. Mr. Millard. Prereq.: Chem. 22. 1 lec.; 2 lab.; 3 cr.

33. STOICHIOMETRY. The calculation of heat and material balances in industrial processes. Mr. Daggett. Prereq.: Chem. 22. 2 lec.; 2 cr.

45, (45). ORGANIC CHEMISTRY. An introductory but comprehensive study of the chemistry of carbon compounds with emphasis on the particular phases of the subject needed by students preparing to be technicians, nurses, majors in Biological Sciences, and others, where a brief course is desired. Mr. Kuivila. Prereq.: Chem. 3-4. (Elective for medical technicians, nurses, majors in Botany, pre-dental students.) 3 lec.; 2 lab.; 5 cr.

51-52. ORGANIC CHEMISTRY. Lectures on the principal classes of organic compounds, aliphatic and aromatic, with emphasis on class reactions and structural theory. Laboratory exercises in the preparation and purification of selected organic compounds. Mr. Funkhouser and assistants. Prereq.: Junior standing; Chem. 26. 3 lec.; 2 lab.; 5 cr.

53-54. ORGANIC CHEMISTRY. Lectures on the principal classes of organic compounds, aliphatic and aromatic, with emphasis on class reactions and structural theory. Laboratory exercises in the preparation and purification of selected organic compounds; also the use of group reactions for the identification of organic substances in a systematic scheme of qualitative organic analysis. Mr. Iddles and assistants. Prereq.: Chem. 22. 3 lec.; 2 lab.; 5 cr.

55-56. STRUCTURAL AND THEORETICAL PROBLEMS OF MODERN ORGANIC CHEMISTRY. An intensive study of the methods of preparation and reactions of the principal classes of organic compounds. Emphasis is on the working of assigned problems. The electron theory of organic chemistry is used to correlate these reactions. The variation in reactivity of these various classes of organic compounds is utilized as a method of characterization of organic compounds. Emphasis is on the solution of assigned problems. Mr. Lyle. Prereq.: One year of organic chemistry. 3 lec. 1st semester; 1 lec. and 2 labs. 2nd semester. 3 cr.

62. INSTRUMENTAL ANALYSIS. The theory and technique of special and recently developed methods of analysis such as colorimetry, turbidimetry, potentiometry, and spectography. Sufficient experience is obtained to allow the development of considerable skill in even the more complex methods. Mr. Millard. Prereq.: Chem. 22. 2 lec.; 2 lab.; reports; 5 cr.

82. INTRODUCTORY PHYSICAL CHEMISTRY. Kinetic theory of gases; quantitative laws for behavior of matter in the gas, liquid, and solid phases; valence and the chemical bond; radioactivity; atomic structure and valence; laws of solutions; homogenous and heterogenous equilibrium; colloids; electrochemistry. Designed for pre-medical and biology students. Mr. Wheeler. Prereq.: Chem. 26-27, Phys. 2, Math. 2 or 11 and 13. 3 lec.; 1 lab.; 4 cr.

83-84. Elementary Physical Chemistry. The properties of gases, liquids, and solids; thermochemistry and thermodynamics; solutions, chemical equilibria reaction rates, conductance and electromotive force. Mr. Wheeler. Prereq.: Chem. 22, Math. 18, Phys. 22. 3 lec.; 2 lab.; 5 cr.

85-86. Advanced Physical Chemistry. A review of selected topics in elementary Physical Chemistry followed by a review of descriptive and theoretical Inorganic Chemistry. Mr. Millard. Prereq.: Chem. 84 or equivalent. 3 lec.; 3 cr.

87, 88. Chemical Literature and Seminar. Use of the Chemical Library; student reports on topics of interest. Mr. Wheeler, Mr. Funkhouser. Prereq.: Chem. 54 and 84. 1 lec.; 1 cr.

89-90. Thesis. A thesis covering the related background and experimental observation of the year's investigation in some selected subject is required. Members of the staff. For Seniors in Chemistry who have completed Chem. 54, 62, and 84 and have a grade point average above 2.5. 5 lab.; 6 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

CIVIL ENGINEERING

Edmond W. Bowler, *Professor;* Russell R. Skelton, *Professor;* Charles O. Dawson, *Professor;* Edwin S. Alling, *Assistant Professor;* Keith B. MacPherson, *Instructor*

2. Surveying. The theory and use of surveying instruments and methods, including measurements of angles, direction and distance, differential leveling, land surveying, note keeping and calculations and plotting relating to traverses. Mr. MacPherson. Prereq.: Math. 13. 1 rec.; 1 lab.; 2 cr.

3-4. Surveying. The theory and use of surveying instruments and methods on plane, precise, and topographic surveys, including: the use and adjustment of tapes, transits, levels, and plane tables, topographic mapping, solution of miscellaneous problems in topograhic surveying, highway and railway curves, observations and reduction of observations on the sun and Polaris for latitude, time, and direction, profile leveling, city surveying, base line measurements, triangulation, and mapping programs in the United States. Some time is spent in the practice of the execution of topographic symbols and lettering. A topographic survey of a small area is completed in the field by the transit and stadia method and a map of the same area is plotted in the drafting room. A topographic map of a small area is also made by the plane table method. Introduction to photogrammetry, including photo interpretation, topographic and planimetric mapping from air photos, use of aerial surveys for engineering purposes. Mr. MacPherson and Mr. Alling. Prereq.: C.E. 2. C.E. 3: 3 rec.; 3 lab.; 6 cr. C.E. 4: 1 rec.; 2 lab.; 3 cr.

6. Route Surveying. Theory and practice relating to preliminary and final location surveys for highways, railways, and pipe lines. Theory and problems in earthwork, the mass diagram, grade lines, vertical curves, cross sectioning and slope stakes. Mr. Skelton. Prereq.: C.E. 4 either concurrently or as a prerequisite. 1 rec.; 2 lab.; 3 cr.

7, (7). SURVEYING. The theory and use of tape, level, transit, plane table and stadia in making plane and topographic surveys. Computations and drafting exercises necessary for making surveys and maps for all purposes. Prereq.: By permission of the instructor. Mr. MacPherson. 2 rec.; 1 lab.; 3 cr.

11. SURVEYING. Topographic surveys, determination of earthwork quantities, location of structures, layout of buildings before and during construction, and other special surveying problems pertaining to building construction. Mr. Dawson. Prereq.: C.E. 2. 1 lec. or rec.; 2 lab.; 3 cr.

15. ENGINEERING MATERIALS. Methods of manufacture, physical properties, and the application of the various materials used in engineering works, including timber, steel, stone, brick, cement, concrete, and bituminous materials. Laboratory experiments and reports on the testing of cements, aggregates, and concrete specimens. Mr. Skelton. Prereq.: M.E. 9 either concurrently or as a prerequisite. 2 rec.; 1 lab.; 3 cr.

22. FLUID MECHANICS. Properties of fluids; statics of fluids; theorems and criteria of fluid motion; fluid flow through orifices, tubes, nozzles and pipes; flow over weirs; flow in open channels; dynamics of fluids in motion. Laboratory exercises and stream gaging practice. Mr. Dawson. Prereq.: M.E. 9 and Math. 18. 3 rec.; 1 lab.; 4 cr.

23, (23). FLUID MECHANICS. Properties of fluids; statics of fluids; theorems and criteria of fluid motion; fluid flow through orifices, tubes, nozzles and pipes; flow over weirs; flow in open channels; dynamics of fluids in motion. Mr. Dawson. Prereq.: M.E. 9 and Math. 18. 3 rec.; 3 cr.

27-28. THEORY OF STRUCTURES. The stress analysis of structures under fixed and moving loads by graphical and analytical means. Use of influence lines; lateral bracing and portals; computation of beam and truss deflections; methods of indeterminate analysis. Mr. Alling. Prereq.: Math. 18, M.E. 9 and 10 as prerequisites or concurrently. C.E. 27, 3 rec.; 1 lab.; 4 cr. C.E. 28, 3 rec.; 3 cr.

31. COMMUNITY PLANNING. An introduction to the subject of Community Planning, especially designed for those students having a major interest in Civil Engineering or Building Construction, having the following purposes: (1) to acquaint the student with planning programs and processes, (2) to study the content and extent of desirable planning programs, (3) to indicate to the engineer his place in the preparation and execution of a planning program. Elective for Seniors in Agriculture, Technology, and Liberal Arts by permission of the instructor. Mr. Dawson. 3 lec. or rec.; 3 cr.

33-34. HYDRAULIC AND SANITARY ENGINEERING. Precipitation, water losses, run-off, drainage areas, stream flow, water power estimates, hydraulic turbines, dams and waterways; the sources, quantity, quality, and sanitary aspects of public water supplies; the methods of purification and distributing systems; the theory and problems of sewerage, the principles governing the disposal of sewage and the various methods of sewage treatment. Mr. Bowler. Prereq.: C.E. 22. C.E. 33: 3 rec.; 1 lab.; 4 cr.; C.E. 34: 3 rec.; 2 lab.; 5 cr.

35. STRUCTURAL DESIGN IN STEEL. The design of members and connections; tension and compression members, beams, plate girders; riveted and welded joints. Mr. Alling. Prereq.: C.E. 28. 2 rec.; 1 lab.; 3 cr.

37. REINFORCED CONCRETE DESIGN. The principles of reinforced concrete including rectanguar beams, slabs, T-beams, columns, footings, retaining walls,

and their applications to the design of buildings, bridges, and hydraulic structures. Mr. Alling. Prereq.: C.E. 28. 2 rec.; 1 lab.; 3 cr.

38. Structural Engineering. The planning and design of determinate and indeterminate structures. Introduction to pre-stressed concrete. Discussion of structural "tools" such as: deflected structures, models, influence lines, and experimenal methods. Mr. Alling. Prereq.: C.E. 35 and 37. 2 rec.; 1 lab.; 3 cr.

39. Highway Engineering. The economics of location and design of highways and city streets; methods of construction, maintenance, and specifications governing the various types of surface. The administration and methods of financing of highway systems. Selected problems of location and design are studied in the laboratory. Mr. Skelton. Prereq.: C.E. 6 and 15. 2 rec.; 2 lab.; 4 cr.

40. Soil Mechanics and Foundations. The principles underlying the behavior of various soils when subjected to structural loads. Problems and methods encountered in foundation design and construction, building codes and legal aspects of foundation construction, also test borings and other underground exploration methods. Mr. Skelton. Prereq.: C.E. 35. 2 lec.; 1 lab.; 3 cr.

41, 42, 43, 44. Student Chapter of the American Society of Civil Engineers. Junior and Senior students in Civil Engineering are required to join the student chapter of the American Society of Civil Engineers. In addition to its ordinary life under the guidance of student officers, the chapter meets once a week under the direction of an instructor, when prepared addresses by the student members are presented. Mr. Dawson. ½ credit. Students passing this course will receive a grade of Cr.

DAIRY HUSBANDRY

Kenneth S. Morrow, *Professor;* Harry A. Keener, *Professor;* Nicholas Colovos, *Associate Professor;* Herbert C. Moore, *Associate Professor*

5. Fundamentals of Dairying. A general survey of the dairy industry; the composition and properties of milk and other dairy products, dairy manufacturing processes, market milk, the selection and judging of dairy cattle. Mr. Morrow, Mr. Moore. 2 lec.; 1 lab.; 3 cr. (Formerly D.H. 6.)

23. Dairy Cattle. Purebred dairy cattle; breed history; pedigrees; family lines and methods of outstanding breeders; the application of the principles of genetics to the improvement of dairy cattle herd analysis. Mr. Morrow. 2 lec.; 1 lab.; 3 cr.

27. Butter and Cheese. (1) The secretion and the chemical and physical properties of milk; pasteurization; cream ripening; starters; churning; organization and operation of factories. (2) The manufacturing and marketing of more important types of cheese. Mr. Moore. 2 lec.; 1 lab.; 3 cr.

29. Domestic Dairying. Nutritive value of milk and milk products. Laboratory exercises in the manufacturing of dairy products. Mr. Moore. 2 lec.; 1 lab.; 3 cr.

30. Dairy Bacteriology. The application of bacteriological principles to the production and processing of milk and other dairy products. Mr. Moore. 2 lec.; 2 lab.; 4 cr.

33. Dairy Products Judging. The various standards and grades of dairy products, with practice in judging milk, butter, cheese, and ice cream. Mr. Moore. 1 lab.; 1 cr.

34. Dairy Cattle Judging. Comparative judging of dairy cattle using animals in the University herd and in nearby herds. Mr. Morrow. 1 lab.; 1 cr.

36. Advanced Dairy Cattle Judging. Continuation of Dairy Husbandry 33, 34. Emphasis on training for participating on dairy cattle judging teams. Mr. Morrow. Prereq.: D.H. 34. 1 lab.; 1 cr.

60. Dairy Seminar. A study of Agricultural Experiment Station and other literature covering recent research in the various phases of dairying. Dairy Husbandry Staff. 2 lec.; 2 cr.

62. Advanced Dairy Science. Basic data, fundamental observations, and discussions of research contributing to the present status of the dairy industry. Mr. Moore. 2 lec.; 2 cr.

64. Milk Production. Feeding and management of dairy animals; calf feeding; raising young stock; feeding for economical milk production. Mr. Keener. 2 lec.; 1 lab.; 3 cr.

65. Market Milk. The producing, handling, and distribution of market and certified milk; dairy farm inspection; control of milk supply. Mr. Moore. 2 lec.; 1 lab.; 3 cr.

66. Ice Cream. The making, handling, and marketing of ice cream and ices. Mr. Moore. 2 lec.; 1 lab.; 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

ECONOMICS AND BUSINESS ADMINISTRATION

Arthur W. Johnson, *Professor;* Joseph E. Shafer, *Professor;* Carroll M. Degler, *Professor;* John A. Hogan, *Professor;* Ruth J. Woodruff, *Associate Professor;* Doris E. Tyrrell,, *Associate Professor;* John D. Hauslein, *Associate Professor;* Benjamin J. Katz, *Assistant Professor;* Myra L. Davis, *Assistant Professor;* John Korbel, *Assistant Professor;* Richard L. Small, *Assistant Professor;* Harry L. Barrett, Jr., *Assistant Professor;* Paul Weiner, *Instructor*

Business Administration

Note — Students who have completed two or more years of bookkeeping in preparatory school will be permitted to register for B.A. 3-4, *Intermediate Accounting,* upon passing, without academic credit, an examination covering the material of B.A. 1-2.

Register for the following courses as B.A. 1, etc.

1-2. Principles of Accounting. The fundamentals of accounting. Theory of debit and credit; functions and classification of accounts; modern accounting records including special and columnar books. Adjusting entries, work sheets, and financial statements. Single proprietorship, partnerships, and an introduction to corporations. Mr. Hauslein. 2 lec. or rec.; 2 lab.; 4 cr.

3-4. Intermediate Accounting. Comprehensive study of corporation accounting principles and objectives of valuation, consignments, installment selling, depreciation and depletion, funds and reserves, application of funds, and analysis of financial statements. Mr. Johnson. Prereq.: B.A. 2. 2 lec. or rec.; 1 lab.; 3 cr.

7-8. Cost Accounting. The relation of cost accounting to general accounting. The place of cost accounting in modern business. Types of cost systems and their application to particular lines of business. Careful analysis of methods of computing costs. Principles of cost control. Mr. Johnson. Prereq.: B.A. 2. 2 lec. or rec.; 1 lab.; 3 cr.

9-10. Hotel Accounting. Theory and practice of keeping accounts and financial records for hotels. Mr. Hauslein. Prereq.: B.A. 1-2. 2 lec.; 1 lab.; 3 cr.

21-22. Commercial Law. The law of contracts, agency, sales, negotiable instruments, partnerships, and corporations. Mr. Barrett. *Not open to Freshmen.* 3 lec. or rec.; 3 cr.

23, (23). Business Communication. Report writing, including preparation of charts, forms, and graphs. Methods of intra-office, inter-office, and inter-business communication. Preparation of instruction data for employees, minutes of meetings and manuals of company practices and procedures. Business letters of various types. Mr. Schultz. Open to Sophomores, Juniors, and Seniors. 3 lec. or rec.; 3 cr.

24. Introduction to Business. An orientation toward the more advanced courses in business administration or a one-semester terminal course for non-majors. Outline of the major fields and problems of business administration: production, distribution, finance, and control. Business in relation to the economy as a whole. Mr. Korbel. 3 lec. or rec.; 3 cr. *Open only to Freshman and Sophomores.*

34. Business Management. Fundamental principles and techniques of successful organization. management, and operation of business activities, including a study of the qualifications, functions, and activities of the executive. Mr. Small. Open to Juniors and Seniors. 3 lec. or rec.; 3 cr.

45. Principles of Selling. Principles and methods used by commercial and industrial concerns in selling to the ultimate consumer, middle man, and other businesses. Consideration of principles employed in personal selling in national sales organizations, manufacturers, producers, and in retail establishments. Mr. Small. Open to Juniors and Seniors. 3 lec. or rec.; 3 cr.

46. Principles of Retailing. Methods and principles of operating chain, department, specialty, and unit stores. Consideration of retail location, store layout and merchandise classification, sales and service policies, pricing, buying, and organization. Mr. Korbel. Prereq.: Econ. 25. 3 lec. or rec.; 3 cr.

47. Principles. of Advertising. Advertising as as element of marketing strategy for the firm. Management considerations involved in the selection of the appropriate form of advertising. Campaign planning, media selection, and testing effectiveness. Mr. Korbel. Prereq.: Econ. 25. 3 lec. or rec.; 3 cr.

48. Sales Management. Principles of successful sales management; their application; merchandising; sales promotion; building a sales organization; advertising's place in sales management; sales policies, costs and controls; selection, development, and training of sales staffs. Mr. Small. Open to Juniors and Seniors. 3 lec. or rec.; 3 cr.

52. Market Analysis and Research. The nature, procedures, and applications of market research. Probability and non-probability sample design. Significance tests. Mr. Korbel. Prereq.: Econ. 25. 3 lec. or rec.; 3 cr.

55. Advanced Accounting. Advanced theory of accounting, corporate consolidations, insolvencies, realization and liquidation problems, estate accounting. Mr. Johnson. Prereq.: B.A. 4 or equivalent. 2 lec. or rec.; 1 lab.: 3 cr. (Not offered in 1954-1955.)

56. Federal Tax Accounting. The Federal income tax laws and accounting procedure in connection therewith. Social security taxes, estate and gift taxes. Mr. Johnson. Prereq.: B.A. 4, or permission of the instructor. 2 lec. or rec.; 1 lab.; 3 cr.

57. Auditing. Study of procedure and practice in the verification of records, analysis of accounts, and the presentation of conclusions. Attention is given to the responsibilities of the auditor and the procedure and practice of preparing reports. Mr. Johnson. Prereq.: B.A. 4 or equivalent. 2 lec. or rec.; 1 lab.; 3 cr. (Alternate years; offered in 1954-1955.)

59. Accounting Systems. Study of underlying principles of building accounting systems. Designing of systems for various types of business enterprises. Mr. Johnson. Prereq.: B.A. 4 or equivalent. 2 lec. or rec.; 1 lab.; 3 cr. (Alternate years; not offered in 1954-1955.)

68. Personnel Administration. A study of methods, techniques, and psychology employed in personnel administration from the standpoint of the executive. The case study method is used. Mr. Hogan. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr.

70. General Insurance. The field of insurance; social value; physical and moral hazzards; risk, its nature and economic significance; reinsurance; types of insurance coverages; fire, casualty, life, social. Fidelity and surety bonds. Mr. Johnson. 3 lec. or rec.; 3 cr. (Not offered in 1954-1955.)

Secretarial Studies

Register for the following courses as Secl. 1, etc.

1-2. Shorthand. Principles of Gregg shorthand with practice in transcribing from shorthand plates and class notes. Secl. 7-8 must either be taken in conjunction with this course or precede it. Miss Tyrrell. Prereq.: Permission of instructor. 5 rec.; 3 cr.

3-4. Advanced Shorthand. A review of fundamental principles, the building of shorthand vocabulary, practice in taking dictation at increasing rates of speed, and practice in developing skill and speed in transcription. Miss Tyrrell. Prereq.: Secl. 2 or equivalent and permission of instructor. 5 rec.; 3 cr.

5, (5). Personal Use Typewriting. Practice in acquiring correct typing techniques, arranging letters, outlines, notes, themes, bibliographies, and simple tabulations. Open to any student who does not know how to typewrite. Miss Davis. Prereq.: Permission of instructor. 5 lab.; 1 cr.

7-8. Typewriting. Practice in acquiring correct typewriting techniques, and in arranging letters, tabulations, and simple manuscripts. Miss Davis. Prereq.: Permission of instructor. 5 lab.; 2 cr. (*See Secl. 27.*)

9-10. ADVANCED TYPEWRITING. Practice in tabulating and in writing business letters, legal papers, and various business forms. Miss Davis. Prereq.: Secl. 8 or the equivalent and permission of the instructor. 5 lab.; 2 cr.

11. FILING. Various alphabetic, numeric, geographic, and subject-matter systems of correspondence filing; cross reference; follow-up methods; filing supplies and equipment. Miss Davis. Prereq.: Secl. 7 and permission of instructor. 3 lec. or rec.; 2 cr.

13. OFFICE MACHINES. Duplicating methods; practice in typing master copies and stencils, and in operating an electric typewriter, a mimeograph, a mimeoscope, and a liquid process duplicator; practice in machine transcription; and an introduction to adding and calculating machines. Miss Davis. Prereq.: Secl. 8 and permission of instructor. 5 lab.; 2 cr.

17-18. SECRETARIAL OFFICE PROCEDURE AND PRACTICE. First semester, discussion of secretarial duties and traits; problems in the discharge of various duties; and problems in office management. Second semester, 144 hours of practice secretarial work in business offices. Miss Tyrrell. This course must be taken in conjunction with Secl. 3-4 and Secl. 9-10, or following these courses and permission of instructor. 3 rec.; 3 cr.

22. ADVANCED DICTATION. Speed building in dictation and transcription. Miss Tyrrell. Prereq.: Secl. 4 and permission of instructor. 3 rec.; 3 cr.

23-24. BUSINESS WRITING. Practice in writing various types of business letters and reports; proofreading; editing. Prereq.: One semester of typewriting preceding this course or taken in conjunction with it. Miss Tyrrell. 3 lec. or rec.; 3 cr.

27. TYPEWRITING. Practice in acquiring typewriting techniques, and in arranging letters, tabulations, and simple manuscripts. This course, which begins on November 8, 1954, is to be taken instead of Secl. 7 by Secretarial students who have had Secl. 5 or the equivalent. Prereq.: Secl. 5 or equivalent and permission of instructor. Miss Davis. 5 lab.; 1 cr.

Economics

Register for the following courses as Econ. 1, etc.

1-2. PRINCIPLES OF ECONOMICS. The fundamental principles which explain the organization and operation of the economic system. Mr. Shafer, Mr. Degler, Mr. Hogan, Miss Woodruff, Mr. Katz, and Mr. Barrett. *Not open to Freshmen.* 3 lec. or rec.; 3 cr.

3, (3). ECONOMIC AND COMMERCIAL DEVELOPMENT OF THE UNITED STATES. Historical survey of American business and industry with emphasis on the period since 1860. Miss Woodruff. 3 lec. or rec.; 3 cr.

ECONOMIC GEOGRAPHY. (See Geog. 4.)

9. TRANSPORTATION. The economic significance of transportation. Its influence on the location of economic activity. Development, organization, and regulation of transportation agencies. Mr. Korbel. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr. (*Formerly Econ. 10.*)

25. MARKETING. The distribution of goods in the United States. The marketing behavior of the firm and its consequences for the economy as a whole. Price competition, the nature and economic significance of non-price

competition. The influence of technology on market structures. Mr. Korbel. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr. (*Formerly Econ. 24.*)

31, (31). ECONOMIC AND BUSINESS STATISTICS. The collection, analysis, interpretation, and presentation of statistical data as applied to economic and business problems. Frequency distribution, index numbers, time series, simple correlations. Emphasis is upon the interpretation and use of statistics. Required of all students majoring in Economics and in the Business Curriculums. Mr. Shafer. Prereq.: Econ. 2. 2 lec. or rec.; 1 lab.; 3 cr.

51. LABOR ECONOMICS. Historical background and present status of labor organizations and problems. Labor-management relations and collective bargaining; economics of wages and employment; case studies. Mr. Hogan. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr.

52. PUBLIC FINANCE. Theory and practice of public expenditures and collection of public revenue; problems and policies in financial administration, national, state, and local; taxation problems in the State of New Hampshire. Mr. Katz. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr.

53. MONEY AND BANKING. Study of the monetary and banking system with reference to monetary standards, value of money, commercial and non-commercial banking, and structure and policy of the Federal Reserve System. Mr. Degler. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr.

54. ADVANCED MONEY AND BANKING. Advanced monetary theory and some of the more practical aspects of modern banking. Mr. Degler. Prereq.: Econ. 53 and permission of the instructor. 3 lec. or rec.; 3 cr. (Alternate years; offered in 1954-1955.)

55. CORPORATIONS. Study of the forms of business organization with special emphasis on the corporate system, combination, and concentration. Mr. Degler. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr.

56. CORPORATION FINANCE. Study of corporate securities, methods of financing, and financial policy. Mr. Degler. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr.

58. PRINCIPLES OF INVESTMENT. The general principles of investment. The problem of investment, investment characteristics of stocks and bonds; public utility, railroad, industrial, and government securities; protection of the investor; investment banking; and related problems. Mr. Degler. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

63. INTERNATIONAL TRADE AND FINANCE. Theory of international trade, foreign exchange, balance of international payments, tariffs and protection; the economic aspects of international relations, with particular reference to recent policies. Miss Woodruff. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr.

64. COMPARATIVE STUDY OF ECONOMIC SYSTEMS. An examination of socialism, communism, capitalism, and modification of these types, particularly as exemplified by leading nations. Miss Woodruff. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr. (*Formerly Econ. 65*)

66. LABOR LAW. Principles of labor law and legislation. Mr. Barrett. Prereq.: Econ. 2 or Govt. 2. 3 lec. or rec.; 3 cr. (*Formerly Gov. 61 and Econ. 61.*)

73. VALUE AND DISTRIBUTION. An advanced course in economic theory. Emphasis is upon theory of price and the distribution of income. Mr. Shafer. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr. (*Formerly Econ. 76.*)

74. The Economics of Contemporary American Business. The nature and theory of business profits and their effect on the various segments of the economy. Mr. Shafer. Prereq.: Econ. 2. 3 lec. or rec.; 3 cr.

EDUCATION

Thomas O. Marshall, *Professor;* Everett B. Sackett, *Professor;* Harlan M. Bisbee, *Associate Professor Emeritus;* Wayne S. Koch, *Associate Professor;* Carleton P. Menge, *Associate Professor;* Ray E. Kehoe, *Assistant Professor;* Austin L. Olney, *Assistant Professor;* Alexander F. Smith, *Instructor;* Austin J. McCaffrey, *Lecturer*

Carl Lundholm, *Professor (Physical Education)*; George R. Thomas, *Professor (Art-Education)*; Philip S. Barton, *Professor (Agricultural Education)*; George M. Moore, *Professor (Biology-Education)*; Marion C. Beckwith, *Professor (Physical Education)*; Paul E. Schaefer, *Associate Dean;* Doris E. Tyrrell, *Associate Professor (Secretarial Studies-Education)*; David F. Long, *Associate Professor (History-Education)*; Robert J. Dowd, *Assistant Professor (Psychology)*; Lewis C. Goffe, *Assistant Professor (English-Education)*; Robert W. Kerr, *Assistant Professor (Physical Education)*; Barbara K. Newman, *Assistant Professor (Physical Education)*; Donald M. Perkins, *Assistant Professor (Mathematics-Education)*; Mildred I. Turney, *Assistant Professor (Home Economics-Education)*; Robert L. Garretson, *Instructor (Music-Education)*; David Siesicki, *Instructor (Language-Education)*; Harlan E. Atherton, Raymond I. Beal, John M. Cotton, Edward W. Crawford, Raymond A. Hoyt, Carl P. James, Arthur E. Toll, Irene W. Wight, Consultants in Teacher Education

Supervising Teachers 1953-1954

Helen Urbanowicz
Mary Boyd
Katherine Brady
Mary P. Brown
Cecil Carter
Mrs. John G. Chase
Ann Depardo
Adelaide Dodge
Jeffrey Francoeur
Francis H. Geremonty
David Kushious
Marjorie M. Meloon
Mary Monaghan
Jessie O'Malley
Charles E. Robitaille
Marion G. Sanders
Lloyd Simpson
Harold B. Snyder

Courses in Education

41, 42. Educational Psychology. The purpose of this course is an orientation to education in general, and teaching in particular. Through an examination of behavior in infancy, childhood, and adolescence, the student gains self-knowledge and an understanding of principles that affect all men. Special emphasis is given to the problems of learning through personal experience and analysis of the process (*Normally one section of Education 42 also will be offered in the first semester and one section of Education 41 in the second semester.*) Mr. Menge and Mr. Smith. Open to Sophomores, Juniors, and Seniors. 3 rec.; 3 cr.

(52), 52. Principles of American Secondary Education. The development and place of the secondary school in the American system of education; aims and functions of secondary education; articulation with lower and higher educational institutions, and with the community; the secondary-school pupil; adjustment of the work of the school to meet individual needs; the offerings, both curricular and extra-curricular, of the secondary school; place and relationship of school board, superintendent, headmaster, and teachers. Mr. Marshall, Mr. Koch, and Mr. Kehoe. 3 rec.; 3 cr.

58, (58). SECONDARY SCHOOL TEACHING. This course is designed to help prospective teachers analyze the problems of junior and senior high school teaching. It emphasizes the role of objectives, lesson preparation, and evaluation. Mr. Kehoe. Prereq.: Educ. 41 and 42, *required tests for teaching selection*,* and permission of the instructor. 3 rec.; 1 2-hr. lab.; 4 cr.

63. AUDIO-VISUAL MATERIALS IN THE ELEMENTARY AND SECONDARY SCHOOLS. A course intended to give teachers a practical working knowledge of the use of various types of audio-visual aids. The following aids will receive particular attention: the school journey; the school museum; silent and sound films and projectors, strip films and projectors, with and without sound disc; transcriptions and radio broadcasts. The course will be centered around the problems which are common to the use of audio-visual aids in both elementary and secondary schools. A laboratory period of one hour each week, in addition to the regular class period, is required. Efforts will be made to arrange the laboratory time to meet the needs of the student. Mr. Olney. 3 cr.

65. EDUCATIONAL TESTS AND MEASUREMENTS. A course emphasizing the nature of measurement and the interpretation of test results. Classification and evaluation of tests. Standardized tests in subject-matter fields. Diagnosis and prognosis of pupils' aptitudes, achievement, attitudes, and interests in the public-school program with particular emphasis upon the role of tests. Mr. Smith. Prereq.: Psy. 1 or Educ. 41. 2 or 3 cr.

83. PRINCIPLES AND PRACTICES OF GUIDANCE. A first course on the principles and practices of guidance for teachers and administrators who are participating or planning to participate in a program of guidance. It will include the study of different philosophies of guidance, orientation, individual and group counseling, and the securing and recording of information. Mr. Menge. Prereq.: Educational Psychology. 2 or 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

Courses in Problems in the Teaching of High-School Subjects

The following courses are devoted to a study of problems, of objectives, selection, and organization of subject-matter, teaching and testing techniques, and classroom management in the teaching of the respective subjects. To be admitted to one of these courses the student must have completed, with a grade of at least C, Educ. 58† and, in addition, the courses in the subject and related subjects designated as prerequisite to the respective courses in this group. A student desiring to be considered for Supervised Teaching must complete with a grade of at least C one of these courses in the subject in which he hopes to do supervised teaching.

For details concerning prerequisites and nature of these courses, see description given under respective subject-matter departments.

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*These tests will be given May 13-16, 1954.

†Except for Ag.-Ed. 91, 92, HE-Ed. 91, and P.E.-Ed. 91.

AGRICULTURE-EDUCATION (AG-ED) 91, 92. PROBLEMS IN THE TEACHING OF HIGH-SCHOOL AGRICULTURE. Mr. Barton. Open only to Juniors and Seniors in Agricultural Teacher Preparation. 2 lec. and 1 lab.; 3 cr.

ART-EDUCATION (ART-ED) 91. PROBLEMS OF TEACHING ART IN ELEMENTARY SCHOOLS. 3 cr. Mr. Thomas.

ART-EDUCATION (ART-ED) (92). PROBLEMS OF TEACHING ART IN SECONDARY SCHOOLS. 3 cr. Mr. Thomas.

BIOLOGY-EDUCATION (BIOL-ED) 91. PROBLEMS IN THE TEACHING OF HIGH-SCHOOL BIOLOGY. 3 cr. Mr. Moore.

ENGLISH-EDUCATION (ENGL-ED) 91. PROBLEMS IN THE TEACHING OF HIGH-SCHOOL ENGLISH. 3 cr. Mr. Goffe.

GENERAL SCIENCE-EDUCATION (GS-ED) 91. PROBLEMS IN THE TEACHING OF GENERAL SCIENCE. 3 cr.

HISTORY-EDUCATION (HIST-ED) 91. PROBLEMS IN THE TEACHING OF HIGH-SCHOOL HISTORY AND OTHER SOCIAL STUDIES. 3 cr. Mr. Long.

HOME ECONOMICS-EDUCATION (HE-ED) 91. PROBLEMS IN THE TEACHING OF HIGH-SCHOOL HOME ECONOMICS. 3 cr. Miss Turney.

LANGUAGES-EDUCATION (LANG-ED) 91. PROBLEMS IN THE TEACHING OF MODERN LANGUAGES IN THE HIGH SCHOOL. 3 cr. Mr. Siesicki.

MATHEMATICS-EDUCATION (MATH-ED) 91. PROBLEMS IN THE TEACHING OF HIGH-SCHOOL MATHEMATICS. 3 cr. Mr. Perkins.

MUSIC-EDUCATION (MU-ED) 91. PROBLEMS IN THE TEACHING OF ELEMENTARY SCHOOL MUSIC. 3 cr. Mr. Garretson.

MUSIC-EDUCATION (MU-ED) (92). PROBLEMS IN THE TEACHING OF SECONDARY SCHOOL MUSIC. 3 cr. Mr. Garretson.

PHYSICAL EDUCATION (PE-ED) 91. PROBLEMS IN THE TEACHING OF PHYSICAL EDUCATION FOR WOMEN. 3 cr. Miss Newman.

Courses in Supervised Teaching

This work is required in the Teacher Preparation Program. It is open only to students whose applications are approved by the Chairman of the Department of Education* and the Co-ordinator of Student Teaching in the subject or subjects in which the applicant desires to do supervised teaching. *Applications should be filed in the office of the Department of Education. on or before November 15 of the academic year in which the supervised teaching is to be done. No applications will be considered* unless the applicant has completed with a grade of at least C the following courses in Education: 41, 42, 52, and 58, and with superior grades in at least 18 semester credits in the subject-matter field in which he desires to teach under supervision. The applicant must also complete with a grade of at least C a course in the problems of teaching the subject in which he desires to do supervised teaching.*

Students may be enrolled for from 6 to 14 credits of work in Supervised Teaching usually in the second semester of the academic year. Students registered in the College of Liberal Arts may count no more than 9 semester credits in Supervised Teaching toward the fulfillment of the major requirements in Education.

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*Except Ed.-Ag. 93 and Ed.-H.E. 94.

Education-Agriculture (Ed-Ag) 93. Supervised Teaching in High-School Agriculture. Prereq.: Senior standing in Ag.Ed. Curriculum.

Education-Art (Ed-Art) 94. Supervised Teaching in Secondary-School Art. Prereq.: Art-Ed 92.

Education-Biology (Ed-Biol) 93, 94. Supervised Teaching in High-School Biology. Prereq.: Biol-Ed 91.

Education-Commerce (Ed-Cs) 94. Supervised Teaching in High-School Commercial Subjects.

Education-English (Ed-Engl) 94. Supervised Teaching in High-School English. Prereq.: Engl-Ed 91.

Education-General Science (Ed-GS) 94. Supervised Teaching in High-School General Science. Prereq.: GS-Ed 91.

Education-History (Ed-Hist) 94. Supervised Teaching in High-School History and Other Social Studies. Prereq.: Hist-Ed 91.

Education-Home Economics (Ed-HE) 94. Supervised Teaching in High-School Home Economics. Prereq.: HE-Ed. 91.

Education-Language (Ed-Lang) 94. Supervised Teaching in High-School Modern Foreign Language. Prereq.: Lang-Ed 91.

Education-Latin (Ed-Lat) 94. Supervised Teaching in High-School Latin.

Education-Mathematics (Ed-Math) 94. Supervised Teaching in High-School Mathematics. Prereq.: Math-Ed 91.

Education-Music (Ed-Mu) 93, 94. Supervised Teaching in Elementary and Secondary School Music.

Education-Physical Education (Ed-PE) 93, (93). Directed Teaching in Physical Education.

Education-Physical Education (Ed-PE) 94. Supervised Teaching of Physical Education in the Field.

ELECTRICAL ENGINEERING

Alden L. Winn, *Associate Professor;* Leon W. Hitchcock, *Professor;* William B. Nulsen, *Professor;* John B. Hraba, *Assistant Professor;* Fletcher A. Blanchard, Jr., *Assistant Professor;* Joseph B. Murdoch, *Instructor*

1-2. Electrical Engineering. Direct current circuits and machinery. Prereq.: Math. 16. Required of Sophomores in E.E. E.E. 1: 2 rec.; 1 lab.; 3 cr. E.E. 2.: 3 rec.; 1 lab.; 4 cr.

3-4. Electrical Engineering. Alternators, transformers, induction motors. regulators, synchronous motors, converters, and rectifiers. Prereq.: E.E. 2. Required of Juniors in E.E. 3 rec.; 3 cr.

5. Circuit Theory. Single phase and polyphase circuits, network theorems, and wave analysis. Prereq.: E.E. 2. Required of Juniors in E.E. 3 rec.; 3 cr.

6-7. Electronics Fundamentals. Basic principles of electronics: thermionic emission, characteristics of vacuum tubes, rectifiers and power supplies.

amplifiers, modulators, detectors, oscillators, gas-tube control circuits, and the use of laboratory instruments in determining circuit performance. (Formerly given as E.E. 14 and E.E. 57.) Prereq.: E.E. 5. E.E. 6 required of Juniors in E.E. and E.E. 7 required of Seniors in E.E. E.E. 6: 3 rec.; 1 lab.; 4 cr. E.E. 7: 3 rec.; 1 lab.; 4 cr.

12. Illumination. Photometry, light sources, lighting applications, wiring methods, and National Electrical Code Rules. Normally required of Seniors in E.E. Approved elective may be substituted with permission of adviser. Elective for students who have completed E.E. 33, or 38. 2 rec.; 2 cr.

15, 16, 17, 18. Student Branch of the American Institute of Electrical Engineers. A student organization conducted in accordance with the bylaws of the Institute. At times the meetings may take the form of a debate, an address by an outside lecturer, or a motion picture of an instructive nature. Students in this course must become student members of the A.I.E.E. or the I.R.E., and must subscribe to a magazine selected by the Department. Required of Juniors and Seniors in E.E. 1 rec.; no cr.

23-24. Laboratory. Operation and test of direct and alterating current equipment; laboratory practice and report presentation. Prereq.: E.E. 2. Required of Juniors in E.E. 1 lab.; 2 cr.

25. Laboratory. A continuation of E.E. 24. Prereq.: E.E. 24. Required of Seniors in E.E. 1 lab.; 2 cr.

31. Circuits and Appliances. Electric circuit theory, wiring methods, efficiency, protection of circuits and equipment, national electrical code, meters, motors, illumination, signal circuits, and telephones. Prereq.: Hotel Administration 21, 22 or Physics 2. 3 rec.; 1 lab.; 4 cr.

33, (33). Fundamentals of Electricity. Direct and alternating current circuits, machines, and equipment. Prereq.: Phys. 22. Required of Juniors in C.E. and Juniors in Chem. E. 3 rec.; 1 lab.; 4 cr.

37-38. Electrical Machinery. Direct and alternating current circuits, theory and characteristics of electric motors and generators, starting and control equipment. Prereq.: Phys. 22. Required of Juniors in M.E. 3 rec.; 1 lab.; 4 cr.

45. Transmission Lines and Networks. Transmission line fundamentals, T and Pi sections, filters, and symmetrical components. Prereq.: E.E. 5. Required of Seniors in E.E. 3 rec.; 3 cr.

51-52. Industrial Electronics Fundamentals. E.E. 51; Principles of electronics and applications to industrial control processes. E.E. 52: Study of operation and testing of selected electronic control systems. Prereq.: E.E. 33 or E.E. 37. Elective for students not registered in the Electrical Engineering Curriculum. 2 rec.; 1 lab.; 3 cr.

58. Communication Systems. Analysis and design of the components of communication systems. Performance tests on receivers, transmitters, power amplifiers, and other elements of radio, telephone, television, carrier current, and speech amplifying systems. Prereq.: E.E. 7. Elective for Seniors in Electrical Engineering with permission of the Department. 3 rec.; 1 lab.; 4 cr.

59 Electron Tubes and Devices. Principles of electron devices and associated circuits. Emphasis on electronic instruments. Prereq.: Math. 19, 20, and Physics 83, 84. Elective for students not registered in the Electrical Engineering Curriculum. 3 rec.; 1 lab.; 4 cr.

60. Advanced Circuit Theory. Steady state and transient analysis, derivation of fundamental formulas and constants. Prereq.: E.E. 45. Elective for Seniors in E.E. 3 rec.; 1 conference period; 4 cr. (If conference period is not offered, 3 cr.)

70, (70). Advanced Electronics Laboratory. Problems in design, analysis, construction, and testing, to be selected by the student. Permission to take this course will be given only upon acceptance and approval of an outline of the nature and extent of the work to be done submitted by the prospective student. Prereq.: E.E. 7. Elective for Seniors with permission of the Department. 1-2 lab.; 1 conference period; 2-4 cr.

76. Laboratory. Advanced laboratory testing and special problems. The student works on problems of his own selection which have been outlined by him and have received approval. This may be in the form of a semester thesis or a series of original experiments. Prereq.: E.E. 25. Elective for selected Seniors in E.E. 4 lab.; 4 cr.

78. Industrial Electronics. Analysis and design of the electronic components used in industrial processes. Performance tests on selected electronic apparatus such as motor controls, synchronizers, voltage regulators, induction and dielectric heating equipment, etc. Introduction to servo mechanism and synchros. Prereq.: E.E. 7. Elective for Seniors in Electrical Engineering with permission of the Department. 3 rec.; 1 lab.; 4 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

ENGLISH

Sylvester H. Bingham, *Professor;* William G. Hennessy, *Professor;* Carroll S. Towle, *Professor;* Edmund A. Cortez, *Professor of Speech;* Lucinda P. Smith, *Associate Professor Emeritus;* Robert G. Webster, *Associate Professor;* G. Harris Daggett, *Associate Professor;* Joseph D. Batcheller. *Associate Professor of Speech;* J. Howard Schultz, *Associate Professor;* Max S. Maynard. *Assistant Professor;* Reginald Call, *Assistant Professor;* John C. Richardson, *Assistant Professor;* Lewis C. Goffe, *Assistant Professor;* George G. Falle, *Assistant Professor;* Robert B. Partlow, *Instructor;* Eileen M. Curran, *Instructor;* Edmund G. Miller, *Instructor;* Gerritt H. Roelofs, *Instructor;* Vincent C. De Baun, *Instructor;* L. Morrell Burke, *Instructor;* Alec W. Finlayson, *Instructor;* Natalie H. Lenaghan, *Instructor*

Remedial Courses

*A. Remedial Work in Writing. Required of all students whose attainments in the *fundamentals of English* are found to be unsatisfactory. Assignment to classes from which the students may be excused either at the end of the semester or at the end of the year. 3 rec.; no credit.

B. Remedial Work in Speech. See the section headed *Speech.*

*C. Remedial Work in Reading. Intensive drill in reading skills for six weeks. 3 rec.; no credit.

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*Any student may be recalled and reassigned to an instruction group at any time in his four years at college upon report of any member of the Faculty that his work in composition or in reading is deficient.

Courses in English

1-2. FRESHMAN ENGLISH. The training of students to write correctly and with force and to read with appreciation and discernment the chief types of literature. The staff of the department under the chairmanship of Mr. Richardson. 3 rec.; 3 cr.

12. THE BIBLE AS LITERATURE. A study of the various literary types found in the Bible and a survey of the influence of the Bible on English literature. Mr. Schultz. Prereq.: English 1-2. 3 rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

13, 14. AN INTRODUCTION TO ENGLISH LITERATURE. The development of English literature from its beginnings to the twentieth century by means of selected readings. Mr. Richardson, Mr. Partlow, and Mr. Falle. Prereq.: English 1-2. 3 rec.; 3 cr.

15, 16. A SURVEY OF AMERICAN LITERATURE. Mr. Webster, Mr. Daggett, and Mr. Goffe. Prereq.: English 1-2. 3 rec.; 3 cr.

22. WRITING FOR THE NEWSPAPER. Mr. Webster. Prereq.: English 1-2. 3 rec.; 3 cr.

23, (23). WRITING OF TECHNICAL REPORTS. Mr. Webster and Mr. Miller. Required of Seniors in Agriculture and in Mechanical, Electrical, and Civil Engineering, and in Building Construction. 1 rec.; 1 lec.; 2 cr.

25-26. ADVANCED COMPOSITION. Practice with compositions of varying lengths. Class discussions with illustrative readings. Weekly conferences. Mr. Towle. Prereq.: English 1-2. 3 lec. or rec.; 3 cr.

27, (27). ENGLISH GRAMMAR. Mr. Goffe. Prereq.: English 1-2. Limited to students in the teacher-preparation program. 3 rec.; 3 cr.

43, 44, 45. READING FOR THOUGHT. Analysis of the thought and structure of forms of writing: exposition, narration, and poetry. Mr. Bingham and Mr. Richardson. Prereq.: English 1-2. 3 rec.; 3 cr.

53, 54. WRITING AS AN ART. The study and practice of forms of writing, together with an examination of the history of literary philosophy. Practice in mutual criticism through class workshop discussions and written comment. Freedom in selection and pursuance of writing interests. Individual conferences. Mr. Towle. Prereq.: English 25 or its equivalent. 2 lec.; 1 rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

The Great Figure Group

55, 56. CHAUCER. Mr. Call. 3 rec.; 3 cr.

*57, 58. SHAKESPEARE'S PLAYS. The major histories, comedies, and tragedies. Mr. Hennessy. 3 lec.; 3 cr.

59. MILTON. Mr. Schultz. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

60. BOSWELL'S JOHNSON. Mr. Maynard. 3 lec.; 3 cr. (Alternate years; offered in 1954-1955.)

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*English 57, 58 is a required course for English Literature majors and may not be used in fulfillment of the requirement of one semester in the Great Figure group.

61. WORDSWORTH. Mr. Call. 3 lec.; 3 cr. (Alternate years; offered in 1954-1955.)

62. BROWNING. Mr. Daggett. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

The Century or Period Group

63, 64. THE RENAISSANCE AND ENGLISH LITERATURE, 1500-1600. Mr. Schultz. 3 lec.; 3 cr. (Alternate years; offered in 1954-1955.)

65, 66. ENGLISH LITERATURE IN THE SEVENTEENTH CENTURY. Mr. Towle. 3 lec.; 3 cr. (Alternate years; offered in 1954-1955.)

67, 68. ENGLISH LITERATURE IN THE EIGHTEENTH CENTURY. Mr. Maynard. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

69, 70. THE ENGLISH ROMANTIC PERIOD. Wordsworth, Coleridge, Lamb, Byron, Shelley, Keats, Hazlitt, DeQuincey. Mr. Call. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

71, 72. VICTORIAN PROSE AND POETRY. Major non-fictional prose from Carlyle to Stevenson and major poetry from Tennyson to Hardy. Mr. Hennessy. 3 lec.; 3 cr. (Alternate years; offered in 1954-1955.)

73, 74. BRITISH LITERATURE OF THE TWENTIETH CENTURY. Mr. Daggett. 3 lec.; 3 cr. (Alternate years; offered in 1954-1955.)

The Advanced American Literature Group

75. NEW ENGLAND RENAISSANCE. Emerson, Thoreau, and other transcendentalists. Mr. Daggett. 3 lec.; 3 cr. (Alternate years; offered in 1954-1955.)

76. AMERICAN NOVEL IN THE NINETEENTH CENTURY. Mr. Webster. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

77. AMERICAN POETRY OF THE NINETEENTH CENTURY. Mr. Daggett. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

78. AMERICAN HUMOR AND SATIRE. Mr. Webster. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

79, 80. AMERICAN LITERATURE OF THE TWENTIETH CENTURY. Mr. Towle. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

The Type Group

81, 82. INTRODUCTION TO ENGLISH DRAMA. The development of English drama, exclusive of Shakespeare, from the Middle Ages to the present. Mr. Hennessy. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

83, 84. THE ENGLISH NOVEL OF THE EIGHTEENTH AND NINETEENTH CENTURIES. Mr. Bingham and Mr. Miller. 3 lec.; 3 cr.

96. THE WRITING WORKSHOP. Not limited to any special type of writing, the student's main contribution to the course, writing, shall be in a mode and length of his own choice. Two days a week are devoted to mutual "workshop" criticism of class work. Two days are utilized to make clear the virtues of all good writing, with illustrations used constantly. On the fifth day, a special topic. Individual conferences are arranged to run parallel to class meetings as an integral part of the course. Members of the course may become members

of the Writers' Conference at reduced rates. Open to all interested in writing who have had a first year of college or its equivalent and who have not previously taken the Writing Workshop. Mr. Towle. Prereq.: Engl. 25 or its equivalent. 3 cr. (*Given only in the Summer Session.*)

English-Education. (Engl-Ed) 91. Problems in the Teaching of High-School English. Principles and methods of teaching literature and composition in secondary schools. For all students who plan to teach English in secondary schools and for students majoring in Language, History, or Education. Mr. Goffe, Prereq.: A grade of C or better in Educ. 58. Literature majors in English, by permission of the instructor; all other students by fulfillment of the following: Engl. 13, 14; 16; 25; 36; 43; one semester of Engl. 57, 58; a demonstration of skill in the use of English grammar, either by the satisfactory completion of Engl. 27 or by examination. 3 lec. or rec.; 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

Speech

Mr. Cortez, *in charge*

The Speech Clinic. For any member of the University who wishes to have his voice and speech examined and corrected.

*B. Remedial Work in Speech. Required of all students whose speech is found to be unsatisfactory.

33, 34. Discussion and Debate. First semester: the proposition and its main issues, sources and tests of evidence, construction of the argumentative brief, laws of reasoning. Second semester: practice in discussion and debate, varsity debating, parliamentary procedure. Prereq.: Engl. 1-2. 3 rec.; 3 cr.

35, (35). Public Speaking. The fundamental appeals and audience psychology; extemporaneous and impromptu speaking for every occasion. Mr. Cortez, Mr. Batcheller. Prereq.: Engl. 1-2. 3 rec.; 3 cr.

36. Speech for Teachers. Practice in reading announcements, short stories, prose, and poetry, with instruction in oral interpretation. Voice recording and analysis. Mr. Cortez. Prereq.: Engl. 1-2. For those who plan to be teachers. 3 lec.; 3 cr. (Not open to those who have credit for English 99.)

37. Introduction to Dramatic Art. A basic course in the appreciation of theater arts and crafts in the many forms of theater, cinema, etc., with reference to their historical development when necessary to interpret contemporary trends. Lectures, illustrated with slides, filmstrips, and recordings. Observational assignments in theater, cinema, and other forms when practical. Discussion. Mr. Batcheller. Prereq.: Engl. 1-2. (*Given only in the Summer Session and not open to those who have credit for English 95.*)

39, (39). Radio Speaking. Practice in the preparation and delivery of radio continuity, readings, skits, talks, and announcements; microphone technique. Mr. Cortez. Prereq.: Engl. 1-2 and permission of the instructor. 3 rec.; 3 cr.

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*Any student may be recalled and reassigned to an instruction group at any time in his four years at college upon report of any member of the Faculty that his work in speech is deficient.

47, 48. Dramatics Workshop. First semester: the fundamentals of acting, stage direction, stage deportment, and the analysis and development of roles in plays. Second semester: the methods of choosing, casting, and directing plays. Practical experience in productions. Mr. Batcheller. Prereq.: Engl. 1-2. 1 rec.; 2 lab.; 3 cr.

97. Radio Workshop. A laboratory course affording daily practice in radio: script writing, announcing, managing, directing, and creating sound effects. Student participation in readings, sketches, news casting, ad-libbing, etc. Frequent voice recording. Use of the broadcasting facilities of the University. Mr. Cortez. Permission of the instructor. (*Given only in the Summer Session.*)

ENTOMOLOGY

James G. Conklin, *Professor;* Walter C. O'Kane, *Professor Emeritus;* Robert L. Blickle, *Associate Professor*

2. Elementary Entomology. An introduction to Entomology in its broad aspects. The structure, biology, and classification of insects. Each student is required to make an insect collection. Mr. Conklin. 2 lec.; 1 lab.; 3 cr.

41. Insects of Orchard and Garden. Studies of the life histories and habits of important insect pests of orchard, garden, and certain field crops. Methods of control. Apparatus for applying insecticides. Mr. Conklin. 2 lec.; 1 lab.; 3 cr.

54. Medical Entomology. Insects and arachnids in relation to public health. The more important disease carriers, their biologies, and means of control. Adapted especially for students interested in public health or medicine. Mr. Blickle. Elective for Juniors and Seniors. 2 lec.; 1 lab.; 3 cr.

55. Household Insects; Stored Products Insects. The problems of pest prevention and control in buildings. Pests of fabrics and clothing. Insects affecting foodstuffs. Termites and other insects attacking wooden structures. Mr. Conklin. 1 lec.; 1 lab.; 2 cr. (Alternate years; not offered in 1954-1955.)

56. Forest Insects. Principles of Forest Entomology. Life histories and habits of the more destructive forests insects. Forest insect control. Adapted especially for forestry students. Mr. Conklin. Prereq.: Ent. 2. 1 lec.; 1 lab.; 2 cr.

57-58. Advanced Entomology. The anatomy and physiology of insects. Systematic Entomology. Mr. Conklin, Mr. Blickle. Open to others than Entomology majors by permission of the Department Chairman. 2 lec.; 2 lab.; 4 cr.

59-60. Advanced Economic Entomology. Problems in applied Entomology. The literature of Economic Entomology. Investigational methods. Studies of the specialized phases of Entomology. Mr. Conklin, Mr. Blickle. Required of Entomology majors. Open to others than Entomology majors by permission of the Chairman of the Department. 1 to 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

FINE ARTS

(*See The Arts*)

FORESTRY

Clark L. Stevens, *Professor;* Lewis C. Swain, *Professor;* Bertram Husch, *Associate Professor;* Oliver P. Wallace, *Assistant Professor*

1. Forestry Principles. Fundamentals of forestry as applied to the orderly handling of woodlands. Mr. Swain. Elective for all students, except Forestry majors. 2 lec.; 1 lab.; 3 cr.

21. Forestry Ecology Problems. Summer Camp course. Studies of several different forest types designed to show the inter-relations of plants and the important factors of their environment. The needs of the individual student are considered in planning the program. Mr. Wallace. Elective for any student. Forty hours of assigned reading and field work per week for 8 weeks. 10 cr.

25. Dendrology. The characteristics of native tree species, and the identification of trees in the field and from specimens. Additional practice in identifying northern species is given during Summer Camp. Mr. Stevens, Mr. Wallace. Required of Freshmen in Forestry; elective for others. 1 lec.; 1 lab.; 2 cr.

26. Wood Identification. The uses of lumber; physical properties and identification of the commercially important woods. Mr. Swain. Prereq.: Permission of the instructor. 2 lec.; 1 lab.; 3 cr.

27. Silvics. Considers the effect of the environment of the forest; forces which influence the growth of trees and stands; practice in measuring the intensity and duration of environment factors; detailed as well as general studies of forest vegetation. For Juniors in Forestry. Mr. Wallace. Prereq.: Bot. 6. 2 lec.; 1 lab.; 3 cr.

28. Mensuration and Surveying. Theory and practice in the elementary principles of forest mensuration, forest inventory, land surveying, and mapping. Study and application of basic statistical theory to forest mensuration. Mr. Husch. Prereq.: Math. 2 or 11 and Math. 13. 2 lec.; 2 lab.; 4 cr.

29-30. Silviculture. The art of producing and tending a forest. Seed collection, storage, and testing; nursery practice; forest plantations; natural regeneration, intermediate cuttings; silvicultural practice. For foresters. Mr. Wallace. Elective for others with approval of the instructor. 2 lec.; 1 lab.; 3 cr.

31, 32. Forest Utilization. Methods of logging and milling in the chief lumber-producing regions of the United States; forest products, their manufacture and marketing; with special problems of the lumber business. Mr. Swain. Prereq.: Permission of the instructor. 2 lec.; 1 4-hr. lab.; 4 cr.

33. Forest Protection. Protection of the forest from fire, insects, fungi, climatic extremes and other injurious agencies. For Seniors in Forestry. Elective for others with approval of the instructor. Mr. Wallace. 2 lec.; 1 lab.; 3 cr.

(34). Wildlife Management. Designed to acquaint the student with the fundamental principles underlying the management of wildlife as a forest crop. Mr. Stevens. For Juniors in Forestry. Elective for others with approval of the instructor. 2 lec.; 1 lab.; 3 cr.

(37). Forest Recreation. Principles and methods of planning, designing, and administering public and semi-public forest recreation areas. Elective for Seniors in Forestry. A second section deals with the use of the forest in recreational programs for campers. Elective for women in Physical Education, Recreation option. Prereq.: Permission of the instructor. Mr. Stevens, Mr. Wallace. 2 lec.; 1 lab.; 3 cr.

39-40. Forest Management. The management of forest areas on an economic and ecological basis. The integration and application of business methods and the technical phases of forestry. Preparation of working plans. Mr. Husch. Prereq.: For. 27-28; 29-30; 41 or 42. 2 lec.; 2 lab.; 4 cr.

41. Game Management Field Practice. Summer Camp Course. Field work on the University Forest at Passaconaway, N. H., and on a game management area of the White Mountain National Forest. Mr. Stevens. For students in Game Management Group. Elective for others by permission of the instructor. Forty hours per week for 8 weeks. 10 cr.

42. Forest Engineering. Field practice at Summer Camp in forest mapping and surveying. Mr. Husch. Prereq.: For. 28; C.E. 7. Forty hours per week for four weeks. 5 cr.

43. Advanced Mensuration. Volume table construction and application, the study of growth and yield and methods of prediction. Application of graphic and statistical solutions to these problems. Mr. Husch. Prereq.: For. 28, 45. 2 lec.; 1 lab.; 3 cr.

44. Forest Economics. Application of economics and finance to the forest business. Nature of forest investments, forest taxation, and forest insurance. Mr. Wallace. Prereq.: Math. 2 or 6; Econ. 1. 3 lec.; 3 cr.

45. Timber Survey. Field practice at Summer Camp in forest inventory. Mr. Husch. Prereq.: Forestry 28; C.E. 7. Forty hours per week for four weeks. 5 cr.

53. Wildlife Management Problems. Summer Camp Course. Special problems in the management of fish and game. Mr. Stevens. Open to advanced students or to those who show unusual promise in the field of research. Prereq.: Permission of the instructor. Forty hours per week for 8 weeks. 10 cr.

55, 56. Advanced Wildlife Management. Readings and discussions on the properties of game populations, and the various phases of management, including public relations. Preparation of a game management plan. The student may be required to send several week-ends working with the state department, checking the deer kill, or helping with other investigational projects. Mr. Stevens. For Seniors in the Wildlife Management Group. 2 lec.; 1 4-hr. lab.; 4 cr.

57. Aerial Photogrammetry in Forestry. Elementary principles of photogrammetry with emphasis on their application to all phases of forestry. The value and use of aerial photos in forest typing, planimetric, and topograhic mapping; measurement of acres and volume estimation. Mr. Husch. Prereq.: Math 13 and permission of instructor. 2 lec.; 2 lab.; 4 cr.

61, 62. Problem in (a) Forest Ecology; (b) Photogrammetry; (c) Forest Utilization; (d) Wildlife Conservation. Work to be arranged according to the needs of individual students. Mr. Stevens, Mr. Swain, Mr. Husch, Mr. Wallace. Prereq.: Senior or graduate standing and permission of the instructor. Hours to be arranged. 2 to 4 credits.

64. Forest Industry Economy. Economy in productive enterprise — logging and manufacturing of forest products; control of harvesting costs as a factor in intensifying applied forest management; planning for minimum cost operations. For Seniors in Forestry. Mr. Wallace. Prereq.: Math. 2; Forestry 31, 44. 3 lec.; 3 cr.

FRENCH

(*See Languages*)

GEOLOGY AND GEOGRAPHY

T. Ralph Meyers, *Professor;* Donald H. Chapman, *Professor;* Glenn W. Stewart, *Assistant Professor;* Horace G. McDowell, Jr., *Instructor;* Lee B. Gibson, *Instructor*

Geology

1-2. Principles of Geology. The earth and its history. A consideration of land forms and a discussion of the materials and structures of the earth's crust. The interpretation of past geologic events, and their effect on the development of life forms. Mr. Meyers, Mr. Chapman, Mr. Stewart, Mr. McDowell, and Mr. Gibson. 3 lec. or rec.; 1 lab.; 4 cr. *This course cannot be used for major credit.*

7. General Geology. A general introductory course in Physical Geology. The structures and materials of the earth's crust and the forces which have produced and altered them. Mr. Stewart. For students in Technology and Agriculture. *Open to Liberal Arts students by permission only.* 2 lec. or rec.; 2 cr. (*Not available for credit after completing Geol. 1.*)

25-26. Mineralogy. The minerals that make up the earth's crust; crystals; minerals and their determination by means of physical and chemical characteristics; and some common mineral associations. Mr. Meyers. Prereq.: One course in Geology or one course in Chemistry. 2 lec. or rec.; 1 lab.; 3 cr. (*Formerly Geol. 35-36.*)

31. Geomorphology. The factors producing the present aspect of the land surface, particularly that of New England. Special emphasis on the work of running water, glaciers, and marine agents. Field trips during the fall season. Mr. Chapman. Prereq.: Geol. 2 or Geog. 3. 3 lec. or rec.; 1 lab.; 4 cr.

32. Glacial Geology. A study of the characteristics of existing glaciers and an interpretation of Pleistocene glacial features. The abundant and varied evidence of glaciation in northeastern North America and Baltic Europe will be emphasized. New Hampshire examples of both Alpine and Continental glaciation will be studied in the field. Mr. Chapman. Prereq.: Geol. 2. 2 lec.; 1 lab.; 3 cr.

33. Structural Geology. The structural units of the earth's crust and the mechanics of their formation. Mr. Stewart. Prereq.: Geol. 1 or 7, and Math. 13 or equivalent. 3 lec. or rec.; 1 lab. or field work; 4 cr.

34. Elements of Petrology. The origin, modes of occurrence, and classification of rocks. Mr. Stewart. Prereq.: Geol. 33. 2 lec.; 1 lab. or field work; 3 cr.

42. Field Geology. Training in basic field methods of geologic mapping. Mr. Stewart. Prereq.: Geol. 33. 1 lec.; 1 lab. or field work; 2 cr.

51-52. Paleontology. The history, development, and morphology of the various groups of organisms, especially the invertebrates, as recorded by fossils found in the rocks of the earth's crust. Specimens will be collected and studied on a field trip which will be held during the second semester. Mr. Gibson. Prereq.: Geol. 1-2 and Biol. 1-2. 2 lec. or rec.; 1 lab.; 3 cr. (*Formerly Geol. 39-40.*)

53-54. Economic Geology. First semester: the types of coal and their occurrence in the United States; petroleum, the structures in which it is found, and the distribution and geology of oil fields, especially in the United States; industrial minerals and their utilization. Second semester: the metals, their ores, and the geology of important ore deposits. Mr. Myers. Prereq.: Geol. 25-26. 3 lec. or rec.; 3 cr.

57, (57). Geological Problems. Special problems by means of conferences, assigned readings, and field or laboratory work, fitted to individual needs from one of the areas listed below. Mr. Meyers, Mr. Chapman, Mr. Stewart, and Mr. Gibson. Prereq.: Permission of the instructor. 1-2 cr. *This course may be repeated to a total of not more than 5 credits.*

a. Aereal Geology
b. Geochemistry
c. Geomorphology, Advanced
d. Geophysics
e. Glacial Geology, Advanced
f. Groundwater Geology
g. Historical Geology, Advanced
h. Industrial Minerals
i. Micropaleontology
j. Mineral Fuels
k. Mineralogy, Advanced
l. Optical Crystallography
m. Ore Deposits
n. Paleontology, Advanced
o. Petrology, Advanced
p. Regional Geology
q. Sedimentation
r. Stratigraphy
s. Structural Geology, Advanced

Geography

Register for the following courses as Geog. 1, etc. Courses in geography cannot be used to satisfy the Science requirements, nor major requirements in Geology.

1, 2. Geography of the Western and Eastern Hemispheres. A general survey of the geography of the earth, with emphasis upon its physical aspects. First semester: Western Hemisphere. Second semester: Eastern Hemisphere. Mr. McDowell. 2 lec. or rec.; 2 cr.

3. Physical Geography. A study of the physical elements of geography and their relationship to man. Mr. McDowell. 3 lec. or rec.; 3 cr.

4. Economic Geography. The resources of the continents and the relationship of these with the principal activities of man. A study of fishing, agriculture, mining, industry, transportation, and commerce is included. With Geog. 3, this course completes a year's basic work in Geography. Mr. McDowell. Open to all students. 3 lec. or rec.; 3 cr.

5. Political Geography. A study of the major nations of the world and their international relations as viewed against their environmental back-

grounds. Current geographical significance of the news with consideration of geo-political schools of thought. Not open to Freshmen. Mr. McDowell. 3 lec. or rec.; 3 cr.

10. GEOGRAPHY OF ANGLO-AMERICA. A study of the United States and Canada treated regionally. Emphasis on the physical background and its influence on cultural characteristics. Mr. McDowell. Not open to Freshmen. Prereq.: 3 hours credit in geography or permission of instructor. 3 lec. or rec.; 3 cr. (Alternate years; offered in 1954-1955.)

12. GEOGRAPHY OF LATIN AMERICA. The physical and economic geography of Mexico, Central America. and the South American countries, treated regionally. Mr. McDowell. Not open to Freshmen. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

21. THE WEATHER. The interpretation of atmospheric phenomena: the heating and circulation of the atmospheres and the nature and movement of the air masses which influence the weather of North America and particularly of New England. Mr. Chapman. 2 lec. or rec.; 2 cr.

22. CLIMATES OF THE WORLD. Classification of climates of the world. Examples and brief descriptions of major climate types, and their influence on the life of man. Mr. Chapman. 2 lec. or rec.; 2 cr.

57, (57). METEOROLOGICAL OR GEOGRAPHICAL PROBLEMS. Special problems by means of conferences, assigned readings, and laboratory work, fitted to individual needs. Mr. Chapman and Mr. McDowell. Prereq.: Permission of the instructor. 1-5 cr.

Physical Science

(*Register for this course as Physical Science 1-2*)

1-2. MAN COPES WITH THE PHYSICAL WORLD. An introduction to the methods and principles used to gain understanding of the physical world; order of dependence of the sciences; the mechanical, descriptive, experimental, historical, and applied approaches. The second semester deals with methods of measurement, probability and error, use and misuse of statistics, physical and mathematical models; technology; modern physical theory; pseudo-science and the critical faculty. Mr. Schneer. 3 rec.; 1 lab.; 4 cr.

GERMAN

(*See Languages*)

GOVERNMENT

JOHN T. HOLDEN, *Professor*; ROBERT B. DISHMAN, *Associate Professor;* ALLAN A. KUUSISTO, *Assistant Professor;* DAVID C. KNAPP, *Assistant Professor*

All students majoring in government must take Government 1 and one other course numbered 2, 3, or 4. These two courses qualify the student for his major but may not be counted for major credit.

1, (1). PRINCIPLES OF AMERICAN GOVERNMENT. A study of the origins and development of local, state, and national government in the United States. Emphasis will be placed on the role which legislators, administrators, judges, and the people themselves play in the governmental process and on the constitutional and political framework within which they operate. Messrs. Dishman, Holden, Knapp, and Kuusisto. Open to all students. 3 lec. or rec.; 3 cr.

2, (2). PROBLEMS IN AMERICAN GOVERNMENT. An analysis of the principal problems facing the American people at the present time: political responsibility, the individual and freedom, the national economy, security and national defense, administrative control and responsibility, and the American position in world affairs. Messrs. Dishman, Holden, Knapp, Kuusisto. Open to all students. 3 lec. or rec.; 3 cr.

3. ELEMENTS OF POLITICAL SCIENCE. A critical analysis of the nature, development, and use in modern political society of the basic and current elements of politics in the area of social science. The course considers scope and method, political behavior, governmental organization, public policy, and the competing ideological patterns, i.e., communism and democracy. Mr. Holden. Open to all students. 3 lec. or rec.; 3 cr. (Not offered in 1954-1955.)

4. AMERICA IN WORLD AFFAIRS. A study of the problems of American foreign relations. The formulation and execution of policy, the emergence of the United States as a world power, contemporary issues confronting the country and policies adopted to meet these issues. Mr. Kuusisto. Open to all students. 3 lec. or rec.; 3 cr.

7, 8. COMPARATIVE GOVERNMENT. The subject-matter of this course is divided into two parts. The first semester is a study of parliamentary governments including Great Britain, France, Canada, and representative smaller states. The second semester will be given to Russia, Nazi Germany, and Japan. Mr. Kuusisto. Not open to Freshmen. 3 lec. or rec.; 3 cr.

12. STATE GOVERNMENT. A comparative examination of the political and legal characteristics of state governments in the United States, with special attention to the organization and administration of government in New Hampshire. Consideration will be given to the functions performed by states in a dynamic federal system, organization and structure of state governments, and political and electoral problems at the state level. Mr. Knapp. Prereq.: Gov. 1. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

14. LOCAL GOVERNMENT. A study of local governmental problems in rural and urban areas. Consideration will be given to organization and structure of county, town, and municipal government; the role of local government in modern society; community planning and development; the analysis of government functions at the local level. Mr. Knapp. Prereq.: Gov. 1. 3 lec. or rec.; 3 cr. (Alternate years; offered in 1954-1955.)

15. POLITICAL PARTIES AND PRESSURE GROUPS. A study of the fundamental problems of popular control of government. The history, programs, and functions of political parties. Major pressure groups, their organization, methods, and objectives. Party finance, nomination procedures and elections, machines and bosses, political campaigns, problems of public control, and the current political situations. Mr. Dishman. Prereq.: Gov. 1. 3 lec. or rec.; 3 cr.

16. PUBLIC OPINION AND PROPAGANDA. A study of public opinion and of the opinion-forming process. Propaganda techniques and methods; the propaganda of totalitarian governments: the influence of the press, the radio, and the motion pictures in molding public opinion; polls as devices for measuring public opinion. Current-day problems involving an analysis of propaganda techniques and identification, propaganda organizations, goals, and strategy are

emphasized. Mr. Dishman. Prereq.: Gov. 1, Psy. 1, or Soc. 1. Not open to Freshmen. 3 lec. or rec.; 3 cr.

17. Public Administration. An examination of the principal concepts of governmental administration, including theories of organization, administrative leadership, internal management, and administrative responsibility and control. Emphasis will be placed upon the relationship of group behavior and policy development to the administrative process. Mr. Knapp. Prereq.: Gov. 1. 3 lec. or rec.; 3 cr. (*Formerly Government 57.*)

51. Introduction to Law. A study of the nature, sources, and problems of the law as distinguished from other forms of social control. In its approach the course is analytical and critical, tracing the origin and development of legal institutions from primitive times to the present and evaluating the modern role of judge, jury, and counsel in the administration of justice. In this way emphasis is given to the law in action, *i.e.*, law as it is applied by our courts and practiced by lawyers rather than as it is formulated by the legislative and executive branches. Mr. Dishman. Prereq.: Gov. 1. 3 lec. or rec.; 3 cr.

52. Constitutional Law. A case study of the American Constitution, stressing the basic constitutional principles on which the American political system is founded and their application to present-day social, political, and economic problems. In addition, emphasis will be given to the powers of Congress, the President, and the federal courts and to the constitutional limitations by which their respective powers are checked. Mr. Dishman. Prereq.: Gov. 1 and Gov. 51. 3 lec. or rec.; 3 cr.

55. World Politics. An analysis of the basic forces which influence the policies of nations toward one another. Recent developments will be discussed under such topics as the nature of power, nationalism, imperialism, ideology, propaganda, economic, political, and military warfare, disarmament, and peace enforcement. The critical relationship between the United States and the U.S.S.R. will be given special emphasis. Mr. Kuusisto. 3 lec. or rec.; 3 cr.

56. International Law and Organization. This course has a double aim: to analyze the rules governing the conduct of states and to examine existing international organizations. An analysis of the United Nations and its subsidiary organizations, as well as the defunct League of Nations and its agencies, is made in terms of their effectiveness in bringing law and order to the international community. The policies of the Great Powers toward major issues of both international law and organization are examined. Mr. Kuusisto. 3 lec. or rec.; 3 cr.

59. Problems of Public Administration. Case studies of administrative behavior, derived from federal, state, and local administrative experience. Emphasis will be placed upon the analysis of factors which influence administrative decision-making in management and policy development. Mr. Knapp. Prereq.: Gov. 17 or 57. 3 lec. or rec.; 3 cr.

60, (60). Government Apprenticeship. Designed to give the student a practical concept of local and state government administration. At least two afternoons a week will be spent working under the supervision of a public official in a unit of state or local government. The student will be assigned service projects designed to assist the public official under whom the student is working. The student will be expected to acquaint himself with the instructional materials available in his field of apprenticeship. Periodic reports will be required. Prereq.: Gov. 14 or Gov. 17 and permission of the instructor. 4 cr.

63. Political Thought in the West. A survey of the principal political theories from Plato and Aristotle to the beginning of the modern liberal tradition. The course is designed to show the growth and development of political thinking and institutions in terms of the development of modern government. Special emphasis will be given to the development of the modern national state and to its fundamental institutions. Mr. Holden. 3 lec. or rec.; 3 cr. (Not offered in 1954-1955.)

64. Modern Political Thought. A survey of modern western political thought from the emergence of the nation state to the present. Special attention will be given to the meaning and growth of the basic patterns of thought on the Continent and in England, including liberalism, democracy, socialism, communism, fascism, and nazism. The contributions of American political thought as it grew from its English origins to the development of the American constitutional system will be emphasized. Mr. Holden. 3 lec. or rec.; 3 cr. (Not offered in 1954-1955.)

65, 66. Research in Government Problems. An individual research project in one of the fields of government, *e.g.*; Local or State Administration, Comparative Government, International Relations, International Organization, Political Theory, Politics, or Public Law to be prepared under the direction of a member of the staff. Emphasis will be placed on the methods and sources of research in government. Mr. Dishman. Open to Senior majors in Government. 3 cr.

68. Public Policy and Industry. A study of the role of government in promoting, regulating, and competing against private industry in certain key sectors of the American economy. Emphasis will be placed on tariff policy and subsidies, the antitrust and "fair trade" laws, unfair labor practices and the settlement of labor disputes, public utility regulation, and the operation of the Tennessee Valley Authority and other publicly-owned enterprises. The legal and political problems confronting New England will be given special stress. Mr. Dishman. Prereq.: Gov. 1. 3 lec. or rec.; 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

GREEK

(*See Languages*)

HISTORY

Philip M. Marston, *Professor;* William Yale, *Professor;* Gibson R. Johnson, *Associate Professor;* Allan B. Partridge, *Associate Professor;* David F. Long, *Associate Professor;* Robert C. Gilmore, *Instructor.*

In these courses an important place is given to historical reading carried on in the reference room. Often a considerable part of the work is written.

The statements in regard to prerequisites are for Liberal Arts students. Agriculture and Technology students should consult the Department Chairman.

DESCRIPTION OF COURSES

Basic Course

The following is a basic course which is required of all students in the College of Liberal Arts.

1, 2. Introduction to Contemporary Civilization. Designed to provide a background of appreciation of the social significance of man's environment, the nature of man, the cultural heritage from the past, recognition of historical allusions in literature and conversation, and knowledge of the general sequence of historic events. Prehistoric and historic social evolution. The historic explanation of modern life and an appreciation of the problems of contemporary society. Messrs. Gilmore, Johnson, Marston, and Yale. 3 lec. or rec.; 3 cr. *This course cannot be used to satisfy major requirements.*

Group A

11. The Ancient Orient. Pre-historic culture in the Near East; a consideration of the contribution of the many peoples and empires, from the Persian highlands to Egypt and the Ægean, in the making of the civilization handed on to the Mediterranean and Western world. Mr. Partridge. Not open to Freshmen. 3 lec. or rec.; 3 cr.

12. History of Greece. The deep-lying elements of Western civilization as developed by Greek thought and action. Hellenic culture and its influence, including adequate attention to the period after the death of Alexander the Great. Mr. Partridge. Not open to Freshmen. 3 lec. or rec.; 3 cr.

13. History of Rome. The study of Roman civilization from the preliterary foundations of Rome to the fourth century A.D. The aim is to deal with the life of society during the republican and imperial periods and to show the background of mediaeval culture and the influence of the Roman upon later human affairs. Mr. Partridge. Not open to Freshmen. 3 lec. or rec.; 3 cr.

14. Mediaeval History. The story of things as they were from the later Roman Empire to the Renaissance era in Europe. A leading purpose is to call attention to the dependence of the Middle Ages upon an earlier period, and another is to point out the mediæval foundations of Modern European history. Mr. Partridge. Not open to Freshmen. 3 lec. or rec.; 3 cr.

19, 20. Modern European History. Europe from the end of the Middle Ages to our own times. The evolution of the national state; international relations; the expansion of Europe overseas; and the background of our modern Western Civilization, especially its ideas, literature, music, and art. A basic course for those who wish to proceed further in the study of European History as well as a survey for those who are interested in special aspects of western cultural development. Mr. Gilmore. Not open to Freshmen. 3 lec. or rec.; 3 cr.

21, 22. History of England. The history of the British Isles from earliest times to the present, and a consideration of the British Empire and Commonwealth of Nations. A parallel to English literature, a background to American political history, and a study of English culture and institutions in the democratic and social integration of the world. Mr. Partridge. Not open to Freshmen. 3 lec. or rec.; 3 cr.

31, 32. The Far East. A study of the history of the peoples and cultures of Japan, China, India, and adjacent territories for the purpose of gaining a better understanding of their contemporary problems and ways of thinking and acting, especially as they relate to modern world developments. Mr. Johnson. Not open to Freshmen. 3 lec. or rec.; 3 cr.

65, 66. History of the Near East. A study of the Ottoman Near East and its political fragmentation resulting from the rise and development of the Arab, Turkish, Zionist, and other nationalist movements with their effect upon the contemporary history of the Near East. The course is organized on a topical basis to provide students with the opportunity for wide reading on selected individual topics. Mr. Yale. Prereq.: History 19, 20, or permission of the instructor. 3 lec. or rec.; 3 cr.

71, 72. History of Russia. A study of Tsarist Russia, its domestic and foreign affairs, and its collapse in 1917; followed by a study of Soviet Russia from the creation of the Soviet Union to the present. Mr. Yale. Prereq.: Hist. 19, 20, or permission of the instructor. 3 lec. or rec.; 3 cr.

87, 88. The Intellectual History of Western Civilization. The history of ideas and of the great epochs in human thought. A study of the dominant characteristics of the leading cultures and of the transitions from one to the other. The content of the course will be selective rather than inclusive. Special attention will be given to a study of some of the major source writings of each period. Mr. Johnson. 3 lec. or rec.; 3 cr. (Alternate years, not offered in 1954-1955.)

Group B

7, 8. History of the United States. A general survey of American history from Washington's first administration to the present. Political, social, economic, and diplomatic aspects are given equal attention. Mr. Long. Not open to Freshmen. 3 lec. or rec.; 3 cr.

9, 10. Latin-American History. The development and influence of Spanish and Portuguese culture as a wide-spread world force; the history of the Latin-American peoples; the relationship of Latin America to North America, particularly in view of recent growth in friendly and diplomatic relations. Mr. Partridge. Not open to Freshmen. 3 lec. or rec.; 3 cr.

51, 52. Colonial and Revolutionary American History. Colonial beginnings in America, national rivalries, the English colonies, the Revolution, and our national life to 1789. Early forms of Americanism in the making. Mr. Marston. 3 lec. or rec.; 3 cr. (Alternate years; offered in 1954-1955.)

59, 60. Social and Cultural History of New England. From the settlements to the present. The material and intellectual aspects peculiar to New England's social and cultural life. The viewpoint is partly that of the antiquarian. Source materials figure considerably. It is assumed that the student is familiar with the general history of New England. Mr. Marston. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

83, 84. The Foreign Relations of the United States. While primarily a course on the diplomatic history of the United States from the Revolution to date, special attention is given to internal politics throughout the world which have affected our foreign relations. Mr. Long. 3 lec. or rec.; 3 cr. (Alternate years; offered in 1954-1955.)

85, 86. Twentieth-Century America. A study of the history of the United States since 1890. Emphasis is placed on economic discontent and political protest from the Populist Revolt to date; and on the world conditions changing and molding United States foreign policy. Mr. Long. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

Group C

Philosophy of History. (See Philosophy 55, 56.)

History-Education 91. Problems in the Teaching of High-School History and Other Social Studies. Bibliography and new interpretations of history; the social studies curriculum, past and present; aims and objectives in the social studies; selection and organization of teaching material; teaching and testing technique. Special emphasis on teaching American History and the Problems of American Democracy. Mr. Long. Open to students who have satisfactorily completed Hist. 7, 8; six credits in other history courses, (*exclusive of Hist 1. 2*); six credits from Gov. 1, Econ. 1, or Soc. 1; and Educ. 58 with a grade of C or better. 3 lec. or rec.; 3 cr. (*This course may not be used to satisfy major requirements.*)

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

HOME ECONOMICS

Anna M. Light, *Professor;* Helen F. McLaughlin, *Professor Emeritus;* Sarah Thames, *Assistant Professor;* Frances Platts, *Assistant Professor;* Elizabeth Rand, *Assistant Professor;* June Ericson, *Assistant Professor;* Mildred Turney, *Assistant Professor.*

Child Development and Home and Family Living

25-26. Child Development. A study of the development and guidance of the child from the prenatal to the adolescent period with emphasis upon the pre-school child through observation and work at the University Nursery School. Other situations involving children may be included during the second semester. Prereq. or concurrent requirement: Psych. 1 or Educ. 41. 2 lec. or rec.; 1 lab.; 3 cr.

81, (82), (81), 82. Projects in Child Development. Principles of guidance of young children. Nursery school procedures and practices. Discussion conferences, and supplementary projects based upon special interests of the student. Work with children in the University Nursery School. Prereq.: H.E. 25-26. 1 rec. or conference; 1-2 labs.; 1-3 cr.

83. Home and Family Living. A discussion of the economic and social problems confronting the family and their relationships to various aspects of homemaking. 3 lec. or rec.; 3 cr.

84. Personal, Family, and Community Health. A study of the principles which promote healthful living and their application to members of the family and to routine home nursing care. 1 lec.; 1 lab.; 2 cr.

Clothing and Textiles

2. CLOTHING SELECTION. The selection of suitable and becoming clothing through the application of the principles of design, and a study of grooming, clothing budgets, and care of clothing. Prereq. or concurrently: Arts 23. 2 lec.; 2 cr.

3. TEXTILES. A study of the textile fibers and their characteristics, the manufacture of yarns and fabrics, and the finishing processes applied to fabrics as related to the ultimate use of textile materials, Prereq.: Chem. 1 and 2. 2 lec. or rec.; 1 2-hr. lab.; 3 cr.

6. PRINCIPLES OF CLOTHING CONSTRUCTION. An introduction to the basic principles of clothing construction and the development of some skill in execution of these processes through application in construction of selected problems using commercial patterns. (A satisfactory independent project must be submitted in order to schedule H.E. 60, H.E. 61, and H.E. 63.) Prereq.: H.E. 2 and 3. 3 2-hr. labs.; 3 cr.

31. HOME DECORATION. An application of the principles of design to the decorating of the home. Not open to Home Economics majors. 3 lec.; 3 cr. (Formerly H.E. 34.)

32. INTERIOR DECORATION. An application of the principles of design to the decorating of the home together with laboratory experience in the construction of home furnishings and the renovation of furniture. Prereq.: Arts 23 and H.E. 6. 3 2-hr. labs.; 3 cr.

46. TEXTILES AND FURNITURE. A study of the problems of purchase and use of furnishings for hotels, hospitals, etc. Open to Juniors and Seniors. No credit will be given when H.E. 3 or 32 have been taken. Prereq.: Arts 23 and Chem. 1, 2. 2 lec.; 1 2-hr. lab.; 3 cr. (Formerly H.E. 45.)

60. FLAT PATTERN. A study of the principles of developing designs from a basic pattern by the flat pattern method; and the development of original patterns and garments. Prereq.: H.E. 6. 2 3-hr. labs.; 3 cr.

61. TAILORING. A study of the principles of constructing tailored garments and the application of the principles through construction of a suit or coat. Prereq.: H.E. 6. 2 3-hr. labs.; 3 cr.

63. DRAPING. A study of the basic principles of fabric manipulation in the draping processes and the evolution of patterns and garments through this method. Prereq.: H.E. 6. 2 3-hr. labs.; 3 cr.

64. ADVANCED TEXTILES. An introduction to the chemical and physical testing of textiles and assigned readings of technical literature in the field. Prereq.: H.E. 3, Chem. 45, Physics 1, and Bact. 1. 1 lec. or rec.; 2 2-hr labs.; 3 cr.

65. HISTORY OF COSTUME. A study of costume (and textiles) from primitive times to the present and the relationship of the mores of each period to the development of the costume for the respective era. Open only to Juniors and Seniors. Prereq.: Soc. 1 or Psych. 1 or Educ. 41, 42. Recommended: Hist. 1, 2. 3 lec. or rec.; 3 cr.

66. COSTUME DESIGN AND FASHION ILLUSTRATION. The development of some skill in the delineation of fashion figures, and the sketching of original costume designs derived from various sources of inspiration. Prereq.: H.E. 6 and H.E. 65. 2 2-hr. labs.; 2 cr.

68. FUNDAMENTALS OF FASHION. A study of economical, psychological, and sociological problems inherent in the field of fashion. A survey of the development of the fashion industry. A study of the outstanding persons in the field. Open to Seniors. Prereq.: Econ. 25, B.A. 46, Psych. 2, and Soc. 1. 3 lec. or rec.; 3 cr.

Foods and Nutrition

10. FOOD SELECTION. A course intended to aid the individual to understand the importance of food and nutrition in achieving and maintaining good health. Lecture and Demonstration. 2 1-hr. periods; 2 cr.

15-16. FOOD PREPARATION. A fundamental course based on the knowledge and application of the scientific principles involved in the composition, selection, preparation, and preservation of foods. Prereq.: Chem. 1-2; 1 lec.; 2 lab.; 3 cr.

21, 22. MEAL PLANNING AND TABLE SERVICE. The planning, preparing, and serving of meals. For non-majors in Home Economics. 1 lec.; 1 lab.; 2 cr.

71. EXPERIMENTAL FOODS. A study of research and technological advances in the preparation and preservation of foods with an opportunity to experiment with specific foods in the laboratory. Prereq.: H.E. 15-16; Ag. Chem. 6 or concurrently with Ag. Chem. 51. 1 lec.; 1 lab.; 2 cr.

72. ADVANCED FOODS. A more comprehensive study of the chemical and physical properties of foods and discussion of current research. Prereq.: H.E. 15-16; Agr. Chem. 6; 3 cr.

73. NUTRITION. The application of the fundamental principles of the physiological and social sciences and their relationships to human nutrition. A knowledge of the nutritive value of foods, essential nutrients which promote growth and health, effect of food on the body, and adjustment of diet to varying income levels. Prereq.: Ag. Chem. 6 or concurrently with Ag. Chem. 51. 2 lec.; 1 2-hr. lab.; 3 cr.

74. NUTRITION IN HEALTH AND DISEASE. A study of the modification of the normal diet and how nutrition is used as a therapeutic measure in the treatment of disease. Prereq.: H.E. 73. 2 lec.; 1 2-hr. lab.; 3 cr.

76. NUTRITION SEMINAR. Discussion of research and experimental work in human nutrition. Exploration of current periodicals, reports, and assigned readings. Prereq.: For Seniors majoring in Foods, Nutrition, and Institutional Administration. 3 rec.; 3 cr.

SELECTION AND PREPARATION OF POULTRY AND EGGS. (See Poultry Husbandry 10.)

Home Economics Education

91. PRINCIPLES AND PROBLEMS OF HOME ECONOMICS EDUCATION. A study of the principles, procedures, and problems involved in developing school and community education with their implications for Home Economics. Prereq.: Educ. 41-42, 52. 3 lec.; 3 cr.

93. NUTRITION EDUCATION. A study of the principles, procedures, and problems involved in the educational program for dietitians and nutritionists. Prereq.: H.E. 73, 74 and Psych. 1, 47. 3 lec.; 3 cr.

94. Supervised Teaching in Home Economics. Eight weeks of supervised teaching. Prereq.: Educ. 41, 42, 52, and H.E. 91. 6 cr.

96. Seminar in Home Economics Education. Discussion and follow-up of problems encountered by students after having completed supervised teaching. Assigned readings and discussions of the current literature in the field of Home Economics Education. For Seniors majoring in Teacher Preparation. Hours to be arranged. 3 cr. Offered last eight weeks of second semester.

98. Principles and Techniques of Demonstration. Discussion of the principles employed and experienced in demonstrating equipment, preparation of foods, etc. Prereq.: For Seniors in Home Economics. Hours to be arranged. 3 cr. Offered last eight weeks of second semester.

Home Management

33. Home Management. Management of time, energy, and money in relationship to home living; skills and techniques for care of the home. Not open to Freshmen. Some laboratory work will be incorporated in the class periods. 3 lec. or rec.; 3 cr.

35, (35). Home Management Residence. The integration and direct application of all phases of Home Economics pertaining to the operation and management of the home. Students live in the Elizabeth DeMeritt Residence for a period of seven weeks. Prereq.: H.E. 15-16 and H.E. 33. For Juniors and Seniors. Offered twice each semester.

Housing and Home Equipment. (See Agricultural Engineering 2.)

Institutional Administration

41. Institutional Management. The organization and management of institutional food and housekeeping services; personnel policies, plant sanitation, records, menu planning, production, and merchandising. Prereq.: H.E. 49-50. 3 lec. or rec.; 3 cr. This course may be taken concurrently with H.E. 43.

43-44. Institutional Practice. Practical experience in the kitchens and serving room of the University Commons. Prereq.: H.E. 49-50. 2 labs.; 2 cr.

48. Field Work. Six weeks' residence and practical experience in an approved hospital or other type of institution. For Juniors majoring in Foods, Nutrition, and Institutional Administration. 3 cr.

49-50. Quantity Cookery. A study of the quantity production and buying of food. Principles of large quantity methods and standards as applied to hotels and institutions. Laboratory work in the quantity cookery laboratory and University Dining Hall kitchens. Prereq.: H.E. 15-16. 1 lec.; 1 4-hr. lab.; 3 cr.

HORTICULTURE

Albert F. Yeager, *Professor*; J. Raymond Helper, *Associate Professor;* L. Phelps Latimer, *Associate Professor;* William W. Smith, *Associate Professor;* Russell Eggert, *Associate Professor;* Edward B. Risley, *Assistant Professor*

2. Plant Propagation. Discussion and practice including soil, sand, and peat media; seed treatments, seeding, watering, light, feeding, and temperatures; leaf, softwood and hardwood cuttings; hormone treatment; budding, root, top- and bridge-grafting; seedbed nursery practice. Mr. Latimer and Mr. Smith. 1 lec.; 1 lab.; 2 cr.

13. Horticultural Crops and Judging. Students are taught how to select fruits, vegetables, and flowers for exhibition, marketing, and domestic use. Instruction is also given in the management and judging of small fairs and exhibitions. A wide range of plants and varieties, both fresh and frozen, are used as class material. Required of all Horticulture majors and recommended for others who are training for such positions as County Agricultural Agents, Home Demonstration Agents, Club Leaders, or Smith-Hughes teachers. Mr. Yeager and Mr. Latimer. 2 lab.; 2 cr.

14. Elementary Vegetable Gardening. Garden soils; testing and planting seeds, selection of varieties with reference to New Hampshire conditions; construction and management of hotbeds and cold frames; fertilization, cultivation, and irrigation of the garden. Mr. Hepler. 2 lec.; 1 lab.; 3 cr.

27. Landscaping the Home Grounds. The design and maintenance of small properties with emphasis on the principles of arrangement and the use and identification of plant materials in the beautification of home surroundings. Mr. Risley. 2 lec.; 1 lab.; 3 cr.

37. Floral Arrangement. Floral design and the use of flowers in the home; practice in floral arrangement. A laboratory fee of $3 is charged. Prereq.: Permission of the instructor. Mr. Risley. 1 lab.; 1 cr.

40. Amateur Floriculture. The fundamentals underlying the growing of plants; culture and classification of greenhouse and outdoor plant materials; study of garden design and the use of garden flowers and deciduous plant materials in beautifying the home; practice work in propagating plants, sowing seeds, transplanting, and other garden work. Not recommended for Horticulture majors. Mr. Risley. 2 lec.; 1 lab.; 3 cr.

44. Horticulture Practice. Seasonal practical work in fruit production, ornamentals, or vegetable production. For Seniors who are deficient in important skills. Mr. Yeager and staff. 1 to 5 cr.

46. Outdoor Flowers. A study of the outdoor flowers that are commonly grown in the temperate region, including climatic requirements, principal varieties, and utilization. Mr. Risley. Prereq.: Hort. 2 and Bot. 1. 2 lec.; 1 lab.; 3 cr.

48. Beekeeping. Habits of honey bees, assembling and use of hives, practice in handling bees. Production of commercial crops of comb and extracted honey. care and protection of bees during fall and winter, extraction of honey and preparation of comb honey and wax. Mr. Hepler. 1 lec.; 1 lab.; 2 cr.

51, 52. Advanced Horticulture. Additional work for students majoring in Horticulture who require further specialization in the field of fruit, flower, vegetable production, or beekeeping. Mr. Yeager and staff. Prereq.: Permission to register from the Department Chairman. 1 to 3 cr. per semester.

53. Pomology: Orchard Fruits. Fundamental principles and experimental data and their applications to orchard problems including the establishment of orchards, soil management, water and fertilizer requirements, mineral deficiencies, training and pruning, fruit bud formation, pollination and fruit setting, thinning and winter injury. Mr. Latimer. 3 lec.; 3 cr.

54. Pomology: Small Fruit Culture. The culture and economic uses of the strawberry, raspberry, blackberry, blueberry, and grape. Each fruit is considered with relation to its history, propagation, planting, pruning, harvesting, marketing, insects and diseases, and domestic uses. Mr. Latimer. 2 lec.; 2 cr.

55. Systematic Survey of Fruits. Important species of fruits and nuts of temperate regions and their botanical relationships. The history, distribution, and merits of each species, and the horticultural varieties developed from it. Mr. Latimer. 2 lab.; 2 cr.

57. Systematic Survey of Vegetables. Important species of vegetables and culinary herbs and their botanical relationships. The history, distribution, and commercial merit of each species and the horticultural varieties developed from it. Mr. Hepler. 2 lab.; 2 cr.

58. Ericaceous Fruits. A course designed to cover both high- and lowbush blueberries and cranberries, including culture, propagation, harvesting, and marketing. For majors in Horticulture. Mr. Smith. 2 lec.; 2 cr.

59. Greenhouse Management. Modern methods of Greenhouse Management including soils, watering, costs of production and marketing, and fundamentals of plant behavior under glass. Varieties, culture, and enemies of greenhouse operations. Practical work in propagating, potting, and other greenhouse operations. Mr. Risley. 2 lec.; 1 lab.; 3 cr.

65. Commercial Vegetable Production. The management of commercial vegetable gardens. Important vegetables and their culture including a comprehensive review of recent experimental work. Mr. Hepler. 2 lec.; 1 lab.; 3 cr.

66. Nursery Management. The development of the nursery business. Factors that influence the location of a nursery, layout of the plant, soil and site, types of plants, pest control, inspection, digging, grading, storage, packing, shipping, and sales. Mr. Eggert. Prereq.: Hort. 2. 1 lec.; 1 lab.; 2 cr.

78. Commercial Greenhouse Crops. A survey of the principal greenhouse crops and an intensive study of their individual culture. Mr. Risley. Prereq.: Hort. 59. 2 rec.; 1 lab.; 3 cr.

91, 92. Horticulture Seminar. A review of recent Horticultural literature and methods of investigational work. Students required to prepare and present papers on selected topics. Mr. Smith and Horticultural staff. For Seniors in Horticulture. Others by permission of the Department Chairman. 1 lec.; 1 cr.

94. Plant Breeding. Application of the principles of genetics to practical plant breeding. Hybridization, chemical treatments, and selections as means of producing and improving varieties. Mr. Yeager. Prereq.: Zool. 61. 2 lec.; 1 lab.; 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

HOTEL ADMINISTRATION

RAYMOND R. STARKE, *Professor*

The courses listed below are given primarily for students in Hotel Administration. Other students are invited to elect these courses with the permission of the instructor provided they have the prerequisites.

1. ORIENTATION. A study of the scope of the hotel business, both resort and commercial, including a history of hospitality, and stressing the development of resort and commercial operations in the U. S. Attention is also given to methods of study and progress in the entire Freshman schedule of work. 2 lec.; ½ cr. *Required of Freshmen in Hotel Administration.*

5. HOTEL OPERATION. This course deals with the problems of hotel management. Some subjects studied are the organization, personnel, and work of the departments, front office procedure, rate structure, and the methods of securing and financing a hotel business. The point of view of the resort operator is constantly compared with that of the man in the year-round hotel. B.A. 9-10 should precede or accompany this course. 3 rec.; 3 cr.

6. HOTEL PUBLIC RELATIONS. The relation of the hotel with the public, either as prospective or present guests; sales promotion media and advertising. For Juniors and Seniors. Prereq.: Permission of the instructor. 2 lec. or rec.; 2 cr.

HOTEL ACCOUNTING. (See Business Administration 1-2, 9-10.)

12. FINANCIAL STATEMENTS. A study of financial reports and statements directed toward costs and percentages in hotel operations. The work is based on the Uniform System of Accounts for hotels as recommended by the American Hotel Association. Prereq.: B.A. 9 or H.Ad. 5. 1 2-hr. rec.; 2 cr.

ELEMENTARY DRAFTING. (See Arts 20.)

FOODS. (See Home Economics 15-16, 49-50.)

PERSONNEL MANAGEMENT. (See Psychology 32.)

TEXTILES AND FURNITURE. (See Home Economics 46.)

23. STEWARDING. The management of the steward's department of a hotel, comprising the purchasing, storage, and issuing of foods, beverages, and supplies with the proper records to keep in connection therewith. This course will be given by an experienced steward. 2 lec. (one meeting on alternate weeks); 1 cr. (Alternate years; not offered in 1954-1955.)

26. HOTEL ENGINEERING PROBLEMS. The study of laundry practices and equipment; kitchen planning and efficient layout; a central cleaning system; water supply, purification, piping, fixtures, and disposal; fire protection, and other practical problems in operation and maintenance. 2 rec.; 1 lab.; 3 cr.

27. HOTEL HOUSEKEEPING. The recruitment, training, and supervision of employees for this department. Purchasing and control of linen, supplies, and equipment. Standards of hotel operations. Care, maintenance, and repair of furnishings. Some attention given to principles of decoration and choice of materials. Six afternoons during the semester, 3 hours each; 1 cr. (Alternate years; offered 1954-1955.)

40, 42, 44, 46. LECTURES ON HOTEL MANAGEMENT. Delivered by representative and well-known men in the hotel business and allied fields. ½ cr. for each course.

HUMANITIES

1-2. Humanities. A course in general education involving the Departments of Languages, English, Music, The Arts, and Philosophy, and designed to give an appreciation of literature, the various arts, and philosophy. The course will operate within an historical framework, but is not intended to be an historical survey. Weekly lectures or demonstrations by members of the Humanities Division, readings, study of slides, films, recordings, museum trips, class recitations, and discussion. Messrs. Daggett, Falle, Lepke, Maynard, and Walsh. 1 lec. and 3 rec.; 3 cr. (*Not open to Freshmen.*)

HUMAN RELATIONS

1, (1). Human Relations. An exploratory course in social science especially for students who have a general, rather than a specialized, interest in the fields of sociology and psychology. The effects of group membership on individual personality are studied. The interplay of biological and environmental factors in personality and social life are investigated from a rather nontechnical approach. Students with a more specialized interest in the field should choose, instead, Psychology 1 or Sociology 1. Mr. Baler and Mr. Durgin. 3 lec. or rec.; 3 cr. *Open only to Freshmen and Sophomores.*

LANGUAGES

John S. Walsh, *Professor;* Clifford S. Parker, *Professor;* R. Alberto Casas, *Associate Professor;* James C. Faulkner, *Assistant Professor;* Alexander P. Danoff, *Assistant Professor;* Arno K. Lepke, *Assistant Professor;* David Siesicki, *Instructor;* Ralph H. Cryesky, *Instructor;* Charles S. Tuckerman, *Instructor*

General Language and Literature

Register for the following courses as Lang. 1, etc.

1, 2. Survey of Greek and Roman Literature. The masterpieces of Greek and Roman literature in translation. Through the study of literature, the students will learn about the ancient civilizations from which much of our contemporary culture has come. A cultural course for the general student unprepared to read the original languages but desiring acquaintance with this important subject matter. A background course for majors in such subjects as English, History, Latin, or the modern languages and literatures. Continued in Languages 51, 52. Mr. Walsh. 3 rec.; 3 cr.

51, 52. Survey of Modern European Literature. The Renaissance, classicism, romanticism, and realism studied as international movements. Stress will be laid, not upon the details of each national literature, but upon the interdependence of the literatures of the various countries. Conducted in English. Mr. Lepke. 3 rec.; 3 cr.

73. Introduction to Romance Philology. The historical development of French and Spanish from Vulgar Latin. Phonology, morphology, syntax, semantics, etymology. Frequent reference is made to the spoken languages of

today as well as to comparative semantics. Mr. Cryesky. Prereq.: One year of Latin and familiarity with two Romance langauges. 3 rec.; 3 cr.

LANGUAGES-EDUCATION (LANG-ED) 91. PROBLEMS IN THE TEACHING OF MODERN LANGUAGES IN THE HIGH SCHOOL. The special objectives, methods, and devices of modern language teaching in high school. For prospective teachers of French, German, and Spanish. Mr. Siesicki. Prereq.: Education 58 with grade of C or better (or one year of teaching experience) and one of the following courses: French, German, or Spanish 6 or 14. 3 rec.; 3 cr.

French

Register for the following courses as Fr. 1, etc.

New students will be assigned to French 1, French 3, or French 5, on the basis of their performance in the French placement examination.

*1-2. ELEMENTARY FRENCH. Elements of French grammar, reading of simple prose, oral practice. 3 rec.; 3 cr. (Students who offer two entrance units [two years of high-school work] in a language will not be permitted to register for the first semester of that elementary language course for credit. They may, however, audit the course.) *Cannot be counted for major credit.*

*3-4. INTERMEDIATE FRENCH. Language and civilization. Principal objectives: (1) to improve the students' ability to read, speak, understand, and write French; (2) to study the civilization of France. Mr. Parker and Mr. Faulkner. Prereq.: French 2 or its equivalent. 3 rec.; 3 cr.

5-6. INTRODUCTION TO FRENCH LITERATURE. By means of lectures, analysis of texts, and collateral reading, representative French authors from the Renaissance to the present will be studied. One class meeting per week will be devoted to speaking and writing French. Mr. Parker. Prereq.: French 4 or its equivalent. 3 rec.; 3 cr. *Required of majors in French.*

13-14. FRENCH COMPOSITION AND CONVERSATION. The correct and fluent use of written and spoken French taught by careful attention to grammar and composition and by laboratory methods. Mr. Faulkner. Prereq.: French 4 or its equivalent. 2 rec.; 4 labs., ½ hr. each; 3 cr.

51-52. FRENCH LITERATURE OF THE MIDDLE AGES AND THE RENAISSANCE. The various forms and masterpieces of French literature from the beginning to the year 1600. Reading in Modern French versions. Mr. Parker. Prereq.: French 5-6 or the equivalent. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

53-54. FRENCH LITERATURE OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES. French literature from 1600 to the French Revolution. Topics studied include: the rise and development of the classical ideal, the masterpieces of the great writers of the age of Louis XIV, the decline and disintegration of classicism in the eighteenth century; the work and influence of Voltaire and Rousseau; the novel and drama in the eighteenth century. Prereq.: French 6. 3 lec. or rec.; 3 cr. (Alternate years; offered in 1954-1955.)

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*No student from a foreign country will be permitted to register for any language course numbered 1-2 or 3-4 (except Greek 1-2, 3-4) in such student's native language.

No student who has taken any course in a foreign language numbered above 4 will be allowed to register for a course in the same language numbered 4 or lower.

Any exception to these rules must be approved by the Chairman of the Department and the Dean of the College of Liberal Arts.

55. FRENCH ROMANTICISM AND REALISM. The period from 1800 to 1870; Chateaubriand and Mme. de Stael; the Romantic School (Lamartine, Hugo, etc.); the historical novel and drama; early realists; romanticism and realism in work of Balzac, realism in the novel and drama (Flaubert, Augier, Dumas fils); Parnassian poetry (Leconte de Lisle, Baudelaire). Prereq.: French 6. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

56. FRENCH LITERATURE DURING THE THIRD REPUBLIC. Principal topics: Zola and naturalism; the reaction from naturalism; the poetry of Verlaine, Rimbaud, Mallarme, and Claudel; the relations of impressionism in art and music with literature; the literature of World War I; Proust and Gide; surrealism; conservatives and innovators between the two World Wars. The influence upon literature of contemporary events (such as the Dreyfus affair) and of political and social changes will be stressed. Prereq.: French 55. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

61-62. ADVANCED FRENCH COMPOSITION AND CONVERSATION. For students who wish to perfect their command of spoken and written French. To provide as much oral practice as possible, the usual preparation for recitations is partially replaced by extra drill sessions. Mr. Parker and Mr. Faulkner. Prereq.: French 14. 6 rec.; 3 cr.

72. FRANCE TODAY. A course designed to bring the students up to date on the realities of modern French civilization. It covers the most significant aspects and trends of literary, artistic, social, economic, and political life in France today. Lectures and discussions conducted in French. Mr. Faulkner. Prereq.: French 14 or permission of instructor. 3 lec.; 3 cr. (Not offered in 1954-1955.)

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

German

Register for the following courses as Germ. 1, etc.

New students will be assigned to German 1, German 3, or German 5 on the basis of their scores on the German reading examination.

*1-2. ELEMENTARY GERMAN. Elements of German grammar, reading of simple prose, oral practice. 3 lec. or rec.: 3 cr. (Students who offer two entrance units [two years of high-school work] in a language will not be permitted to register for the first semester of that elementary language course for credit. They may, however, audit the course.) *Cannot be counted for major credit.*

*3-4. INTERMEDIATE GERMAN. Designed to improve the student's ability to read, speak, and write German. Section "a" will be conducted for those who wish to develop their ability to read, write, and speak the language. *Section "b" will be reserved for pre-medical students, majors in Physics, Chemistry, Geology, Forestry, Agriculture, and Engineering and will have as its objective the development of the ability to read scientific German.* Mr. Danoff and Mr. Lepke. Prereq.: German 2 or its equivalent. 3 rec.; 3 cr.

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Any exception to these rules must be approved by the Chairman of the Department and the Dean of the College of Liberal Arts.

5-6. CIVILIZATION AND LITERATURE This course will give the student a clear and complete view of German literature. Its aim is to distinguish and clarify the principal directions of German literature from its origins to the present. Attention will be paid to the interrelation of history and literature. Collateral readings. Mr. Lepke. Prereq.: German 4. 3 lec. or rec.; 3 cr.

13-14. GERMAN COMPOSITION AND CONVERSATION. For students who desire a fluent practical command of spoken and written German, Approximately two thirds of the class time will be devoted to conversation; the remaining part to composition and readings which will provide subject matter for oral work. Mr. Lepke. Prereq.: German 4. 3 rec.; 3 cr. (Not offered in 1954-1955.)

53-54. GERMAN LITERATURE OF THE EIGHTEENTH CENTURY. German literature from the beginning of the century to the advent of Romanticism. Topics studied include: the rise and development of Classicism, the masterpieces of Lessing, Goethe, and Schiller, the decline and disintegration of Classicism in the eighteenth century. Collerateral readings. Prereq.: German 6. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

55-56. GERMAN LITERATURE OF THE NINETEENTH CENTURY. The period from 1800 to the death of Nietzsche will be studied from four points of view: (a) Rise and development of the Romantic School including the Romantic Opera, (b) the Drama as reflected in the works of Kleist, Grillparzer, Hebbel, Hauptmann, (c) the Novel as an illustration of social and cultural conditions with emphasis on the humorists (Richter, Grabbe, Meyer, Keller, Busch), (d) the collapse of the idealistic systems of philosophy as reflected in the works of Schopenhauer, Nietzsche, and others. Prereq.: German 6. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

57-58. TWENTIETH CENTURY GERMAN LITERATURE. Literature from 1900 to the present time including the schools of Naturalism, Impressionism, Expressionism, and "Neue Sachlichkeit." Emphasis is placed on the works of Kafka and of the Nobel-prize winners, Hauptmann, Spitteler, Thomas Mann, and Hesse. Readings and discussions will be supplemented by articles and commentaries from current German literary magazines. Prereq.: German 6. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

Greek

Register for the following courses as Gr. 1, etc.

1-2. ELEMENTARY GREEK. Grammar, composition, translation. Mr. Walsh. Prereq.: Permission of the instructor. 3 lec. or rec.; 3 cr. (Alternate years; offered in 1954-1955.)

3-4 INTERMEDIATE GREEK. Translation of several books of Homer's *Iliad;* work in grammar and word-derivation. Mr. Walsh. Prereq.: Greek 2. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

Italian

Register for the following course as Ital. 1, etc.

*1-2. ELEMENTARY ITALIAN. Elements of Italian grammar, reading of simple prose, oral practice. Pronunciation and comprehension of Italian songs. Mr. Cryesky. 3 lec. or rec.; 3 cr. *Cannot be counted for major credit.*

Latin

Register for the following courses as Lat. 1, etc.

New students will be assigned to Latin 1, Latin 3, or Latin 5 on the basis of their scores on the Latin Reading Examination.

*1-2. ELEMENTARY LATIN. Elements of grammar, reading of simple prose. Study of the changes in meaning and form of English and Romance language derivatives from Latin. 3 lec. or rec.; 3 cr. (Students who offer two entrance units [two years of high-school work] in a language will not be permitted to register for the first semester of that elementary language course for credit. They may, however, audit the course.) *This course cannot be counted for major credit.*

*3-4. INTERMEDIATE LATIN. A review of Latin grammar and vocabulary, followed by readings in prose and poetry. Prereq.: Latin 2 or the equivalent. 3 lec. or rec.; 3 cr. (Alternate years; offered in 1954-1955.)

5-6. LATIN PROSE AND POETRY. Study of selections from Livy, Catullus, Ovid, Phaedrus, Martial, and the odes of Horace. Translation, lectures, and study of the influence of Latin on English poetry. Mr. Walsh. Prereq.: Latin 4 or equivalent. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

53-54. THE HISTORIANS. Livy, Suetonius, and Tacitus will be studied in selected works. Illustrated lectures and outside readings will serve to provide the historical, social, and political background of Rome essential to the student or teacher of Latin. Prereq.: Latin 6 or equivalent. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

55-56. THE GOLDEN AGE. A study of Roman literature of the classical period, particularly the works of Caesar, Cicero, and Virgil. Prereq.: Latin 6 or its equivalent. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

Spanish

Register for the following courses as Span. 1, etc.

New students will be assigned to Spanish 1, Spanish 3, or Spanish 5 on the basis of their scores on the Spanish Reading Examination.

*1-2. ELEMENTARY SPANISH. Elements of Spanish grammar, reading of simple prose, oral practice, dictation. 3 rec.; 3 cr. (Students who offer two entrance units [two years of high-school work] in a language will not be permitted to register for the first semester of that elementary language course for credit. They may, however, audit the course.) *This course cannot be counted for major credit.*

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*No student from a foreign country will be permitted to register for any language course numbered 1-2 or 3-4 (except Greek 1-2, 3-4) in such student's native language.

No student who has taken any course in a foreign language numbered above 4 will be allowed to register for a course in the same language numbered 4 or lower.

Any exception to these rules must be approved by the Chairman of the Department and the Dean of the College of Liberal Arts.

*3-4. INTERMEDIATE SPANISH. Language and civilization. Principal objectives: (1) to improve the student's ability to read, speak, write, and understand Spanish; (2) to study the civilization of Spanish-speaking countries. Mr. Cryesky and Mr. Siesicki. Prereq.: Spanish 2 or its equivalent. 3 rec.; 3 cr.

5-6. SPANISH CIVILIZATION AND LITERATURE. This course will give the student a clear and complete view of Spanish literature. Its aim is to distinguish and classify the principal directions of Spanish literature from its origins to the present. Attention will be paid to the interrelation of history and literature. Collateral readings. Prereq.: Spanish 4. 3 lec. or rec.; 3 cr.

13-14. SPANISH COMPOSITION AND CONVERSATION. The use of written and spoken Spanish taught by careful attention to pronunciation, grammar, and composition. Approximately two thirds of the class time will be given to conversation; the remaining part to composition and readings which will provide subject matter for oral work. Mr. Casas. Prereq.: Spanish 4. 3 rec.; 3 cr.

51. SPANISH LITERATURE UP TO 1600 AND CERVANTES. Readings and discussion of the great human creations of early Spanish Literature such as El Poema del Mio Cid, El Libro de Buen Amor, La Celestina and Don Quijote, and their social and historical background. The first part of the course will cover early Spanish literature up to Cervantes. The second part of the course will be devoted entirely to Cervantes: his life, drama, Novelas Ejemplares, and his masterpiece Don Quijote. Mr. Cryesky. Prereq.: Spanish 6 or equivalent. 3 lec.; 3 cr. (Alternate years; not offered in 1954-1955.)

52. DRAMA AND POETRY OF THE SIGLO DE ORO. Discussion of the social background of the baroque period and readings of the representative plays of Lope de Vega, Calderon, Alarcon, Tirso de Molina, and the poetry of Gongora and Quevedo. Development of the prose of the period. Mr. Cryesky. Prereq.: Spanish 6 or equivalent. 3 rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

55. LITERATURE OF THE NINETEENTH CENTURY. After a preliminary survey of the 18th century, this course will cover the readings and discussion of the main literary movements and writers of the 19th century such as Quintana, Espronceda, Zorrilla, Larra, Duque de Rivas, Becquer, Perez Galdos, Valera, Pereda, Clarin, and Echegaray. Social and historical background of Spain in relation to 19th century thought in Europe. Mr. Casas. Prereq.: Spanish 6 or equivalent. 3 rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

56. CONTEMPORARY SPANISH LITERATURE. Starting with the generation of 1898 this course will cover the readings and discussion of the work of such writers as Unamumo, Azorin, Baroja, Machado, J. R. Jimenez, Ortega y Gasset, Garcia Lorca, Perez de Ayala, Casona, Benavente, and a survey of Spanish literature and thought since 1939. Mr. Casas. Prereq.: Spanish 6 or equivalent. 3 rec.; 3 cr. (Alternate years; not offered in 1954-1955.)

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*No student from a foreign country will be permitted to register for any language course numbered 1-2 or 3-4 (except Greek 1-2, 3-4) in such student's native language.

No student who has taken any course in a foreign language numbered above 4 will be allowed to register for a course in the same language numbered 4 or lower.

Any exception to these rules must be approved by the Chairman of the Department and the Dean of the College of Liberal Arts.

65, 66. Spanish-American Literature. Lectures and discussion on the main themes of Spanish American literature through the readings of the works of the most representative authors along with a historical, social, and geographical background of the New World. Mr. Casas. Prereq.: Spanish 6 or equivalent. 3 rec.; 3 cr. (Alternate years; offered in 1954-1955.)

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

LATIN

(*See Languages*)

LAW

(*See Other Programs of Study, page* 75)

LIBERAL ARTS

The following courses are non-departmental courses open only to Seniors in the College of Liberal Arts. Register for them as L.A. 51 or L.A. 97.

51, (51). Senior Synthesis. This course serves to help the student to integrate the knowledge he has acquired, to enrich his personal life, and to develop his personal philosophy through a critical examination of several phases of American civilization as approached in a liberal arts college. It seeks to acquaint the student with the methods and intellectual tools used in dealing with the problems of contemporary civilization and to urge him to take an active part in their solution. Mr. Holden, Mr. Long, and Mr. Nielson. Prereq.: Senior standing in the College of Liberal Arts. 1 two-hour lecture and discussion period and 2 one-hour seminar periods. 3 cr.

97, (97). Independent Study. See description of the plan on page 88. Not less than 6 cr. in a single semester nor more than 12 cr. for the year.

MATHEMATICS

Dennis B. Ames, *Professor;* Marvin R. Solt, *Professor;* William L. Kichline, *Associate Professor;* Donald M. Perkins, *Assistant Professor;* Robert O. Kimball, *Assistant Professor;* James B. Crabtree, *Assistant Professor;* Robert B. Davis, *Assistant Professor;* H. Gordon Rice, *Assistant Professor;* Randall M. Conkling, *Assistant Professor;* Frederic Cunningham, *Assistant Professor;* Frederick J. Robinson, *Instructor;* Cornelius W. Schenck, *Extension Lecturer*

2, (2). Algebra. The elements of algebra. This course is intended primarily for students with only one entrance unit of algebra. *Not open to students eligible to enter Math. 11, except by permission of the department chairman.* Prereq.: One entrance unit of algebra. 3 rec.; 3 cr. *Does not count for major credit in Mathematics.*

9. Solid Geometry. The elements of solid geometry. Prereq.: High-school algebra and plane geometry. 2 rec.; 2 cr. *Does not count for major credit in Mathematics.*

11, (11). Algebra. The elements of algebra. Prereq.: 3 entrance units of mathematics, which should include (1) at least two years of algebra and (2) one year of geometry or of geometry and trigonometry. 3 rec.; 3 cr. *Does not count for major credit in Mathematics.*

13, (13). Trigonometry. The elements of trigonometry, logarithms, complex numbers. Prereq.: Math. 2 or Math. 11. (*Math. 11 may be taken simultaneously.*) 3 rec.; 3 cr. *Does not count for major credit in Mathematics.*

14, (14). Analytic Geometry. The elements of analytic geometry. Prereq.: Math. 13 and Math. 11 or 2. 3 rec.; 3 cr.

16, (16). Calculus I. An introduction to differential calculus. Prereq.: Math. 14 (may be taken concurrently). 3 rec.; 3 cr.

17, (17). Calculus II. Differential and integral calculus. Prereq.: Math. 16. 3 rec.; 3 cr.

18, (18). Calculus III. Infinite series, Taylor's expansion, partial differentiation, multiple integrals, a brief introduction to a few elementary types of differential equations of first order and first degree. Prereq.: Math. 17. 3 rec.; 3 cr.

19, (19). Differential Equations. A first course in ordinary and partial differential equations. Prereq.: Math. 18. 3 rec.; 3 cr.

20. Applied Mathematics. Fourier series, line and surface integrals, partial differential equations of mathematical physics and engineering, Bessel and Legendre functions, introduction to boundary value problems, vector analysis. Prereq.: Math. 19. 3 rec.; 3 cr.

30. Astronomy. A brief descriptive course. A study of the physical characteristics and motions of the members of the solar system and the sideral universe. Illustrated lectures, recitations, and practice in the use of equatorial telescope. Mr. Solt. Prereq.: One year college physical science. 3 rec.; 3 cr.

32. Applications of Statistical Methods. Frequency distribution, measures of central tendency, measures of dispersion, normal probability curve, curve fitting and correlation, sampling, analysis of results, tests of significance. Prereq.: Math. 11 and Math. 13. 3 rec.; 3 cr.

34. Mathematics of Finance and Statistics. Simple and compound interest, annuities, depreciation, evaluation of securities, building and loan associations, elements of life insurance, introduction to statistical methods and finite differences. Prereq.: Math. 13. 3 rec.; 3 cr.

38. History of Mathematics. An historical background and an appreciation of the development of various fields of mathematics. Designed especially for those preparing to teach mathematics in high school. Prereq.: Math 17. 3 rec.; 3 cr. (Alternate years; offered in 1954-1955.) *May be counted as major credit only by students preparing to teach mathematics in the secondary schools.*

40. Projective Geometry. A first course in projective geometry. Prereq.: Math. 18. 3 rec.; 3 cr.

43-44. Introduction to Mathematical Statistics. Frequency distribution, averages, measures of dispersion, measures of skewness, normal probability curve, correlation, sampling tests of significance. Prereq.: Math. 16 3 rec.; 3 cr.

46. Statistical Quality Control. An introduction to the application of statistical methods to control of quality of manufactured products and to acceptance sampling. Averages, measures of dispersion and distributions. The Skewhart control chart, and the use of standard acceptance sampling tables. Mr. Kichline. (*Permission of instructor.*) 1 rec.; 1 cr.

47-48. Introduction to Analysis. The real number system; a rigorous treatment of such topics as sequences, limit, convergence, continuity, the derivative, the Riemann integral, the elementary functions. This course is suggested as preparation for Math. 85-86. Prereq.: Math. 18. 3 rec.; 3 cr.

49. Elementary Differential Geometry. A first course in differential geometry. Prereq.: Math. 20. 3 rec.; 3 cr.

61-62. Higher Algebra. The integers, the rational, real and complex numbers systems, congruences, theory of polynominal equations, theory of groups, vector spaces and transformations, matrices and determinants, rings, integral domains, fields, ideal theory, lattices and Boolean algebras. Prereq.: Math. 17. 3 rec.; 3 cr.

65-66. Advanced Calculus. Functions of several variables, continuity, limits; partial differentiation; multiple, line and surface integrals; uniform convergence, improper integrals; Gamma and Beta functions; Fournier series and integral; Stieltjes integral; Laplace transform. Prereq.: Math. 19. 3 rec.; 3 cr.

85-86. Theory of Functions. An introductory course in the theory of both functions of a real variable and functions of a complex variable. Topics covered will include the real and complex numbers, elements of point set theory, various classes of functions and their properties, Riemann integral; analytic functions, Cauchy theorem, infinite series, residues, contour integration, existence theorms in differential equations. Prereq.: Math. 20. 3 rec.; 3 cr.

91. Mathematics-Education (Math-Ed). The aims and values of secondary-school mathematics; the recommendations of the national committee on mathematics requirements, and the State Board requirements; the subject matter and the sequence in which it should be presented in both junior and senior high school; techniques and instructional aids used in teaching secondary-school mathematics; errors, testing program, remedial teaching. Students preparing to teach mathematics in high school should register for this course; it is a prerequisite for Supervised Teaching in Mathematics. Lectures, assigned readings, and discussions. Mr. Perkins. Prereq.: Ed. 61 and Math. 16. 3 rec.; 3 cr. *May be counted as major credit only by students preparing to teach mathematics in the secondary schools.*

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

MECHANICAL ENGINEERING

Edward T. Donovan, *Professor;* Edward L. Getchell, *Professor Emeritus;* Lauren E. Seeley, *Professor;* E. Howard Stolworthy, *Professor;* Tenho S. Kauppinen, *Associate Professor;* William E. Clark, *Assistant Professor;* William D. Clement, *Assistant Professor;* Leonard A. Fisher, *Assistant Professor;* Russell L. Valentine, *Assistant Professor;* Elias M. O'Connell, *Instructor;* Lyman J. Batchelder, *Instructor Emeritus;* John C. Tonkin, *Instructor Emeritus*

1-2. Engineering Drawing. Fundamentals, including free-hand lettering, use of instruments, isometric drawing, and the solution of problems by the principles of descriptive geometry. Messrs. Kauppinen, Clement, Clark, Fisher, O'Connell and Valentine. 2 lab.; 2 cr.

3. Machine Drawing. Application of the principles of engineering drawing to machine parts. Various pictorial systems as an aid in sketching. Reproduction methods and modern drafting room organizations. Commercial drafting room methods in sketching machine parts, drawing from sketches, and making tracings. Mr. Clark and Mr. O'Connell. Prereq.: M.E. 1. 2 lab.; 2 cr.

4. Kinematics. Motion in machine construction; belts and other flexible connectors; gear and gear teeth; wheels in trains; epicyclic trains; cams; instantaneous centers; linkwork, velocity, and acceleration diagrams. Mr. Kauppinen and Mr. Clark. Prereq.: M.E. 2 and Math. 16. 1 rec.; 2 lab.; 3 cr.

7-8. Mechanics. A study of forces and moments of forces; determination of stresses in trusses and frames; centroids and centers of gravity; rectilinear and curvilinear motion; translation and rotation of bodies; work, power, also impulse and momentum and energy. The application of mechanics to the determination of stress and strain in rigid bodies. The study of thin walled cylinders; riveted joints; torsion; transverse loading of beams; deflection in beams of all kinds; study of columns; compound stresses as applied to design of machine parts. Mr. Kauppinen, Mr. Clark, and Mr. Clement. Prereq.: Math. 17 and Phys. 21. 4 rec.; 4 cr.

9-10. Mechanics. Similar to Mechanical Engineering 7-8, but with those portions having application to the design of machine parts omitted. For Junior civil engineers. Mr. Kauppinen, Mr. Clark, and Mr. Clement. Prereq.: Math. 17 and Phys. 21. M.E. 9. 3 rec.; 3 cr. M.E. 10. 3 rec.; 1 lab.; 4 cr.

11, 12. Manufacturing Processes. A study of methods used in the shaping, forming, and joining of metals and other engineering materials, including demonstration and practice in the use of machine tools and metal-forming equipment. Mr. Clark and Mr. O'Connell. 2 lab.; 2 cr.

15-16. Machine Design. Application of the principles of mechanics to the design of machine elements, with the idea of manufacturing the parts in the most economical manner in the shops. General principles of design will be followed rather than the development of any particular system of procedure. Mr. Kauppinen. Prereq.: M.E. 8. 3 lab.; 3 cr.

19, 20. Mechanical Engineering Materials. The properties, uses, and treatment of ferrous and non-ferrous metals and alloys, plastics, etc., including work in the testing of materials. Mr. Clement. Prereq.: M.E. 7-8 taken concurrently. M.E. 19. 2 rec.; 1 lab.; 3 cr. M.E. 20. 2 lab.; 2 cr.

21. Heat Power Engineering. The fundamental theory of engineering thermodynamics and its applications to steam power plant and internal com-

bustion equipment. For civil engineers. Mr. Donovan and Mr. Fisher. Prereq.: Math. 17 and Phys. 21. 3 rec.; 3 cr.

23-24. THERMODYNAMICS. The fundamental laws of thermodynamics and their relation to the operation of mechanisms using gases and vapors as their working substances. Mr. Donovan and Mr. Stolworthy. Prereq.: Math. 17 and Phys. 21. 3 rec.; 3 cr.

27-28. MECHANICAL LABORATORY. The apparatus and methods of testing power plant operation and equipment. Mr. Donovan and Mr. Valentine. Concurrent requirement: Enrollment in M.E. 23-24. 1 lab.; 1 cr.

29-30. MECHANICAL LABORATORY. Methods of investigating operation and testing of power plant equipment. Mr. Donovan and Mr. Valentine. Concurrent requirement: Enrollment in M.E. 23-24. 2 lab.; 2 cr.

31, (31). FORGING AND WELDING. Advanced work in forging and welding metals. A continuation of the work of M.E. 11 and 12 with some opportunity being provided for practice in forging and gas and electric welding. Mr. O'Connell. Prereq.: M.E. 11, 12. 2 lab.; 2 cr.

32, (32). MACHINE SHOP PRACTICE. Advanced work in the study of machine tools and their uses, production methods, inspection, and control. Mr. Clark. Prereq.: M.E. 11, 12. 2 lab.; 2 cr.

39. HEATING AND AIR CONDITIONING. Heat losses and ventilation requirements of buildings, and the design of specific heating and ventilating systems. Mr. Stolworthy and Mr. Fisher. Prereq.: M.E. 24. 2 rec.; 2 cr.

40. HEATING AND AIR CONDITIONING. Present methods of heating and ventilating buildings. Mr. Stolworthy and Mr. Fisher. Prereq.: Hotel Ad. 21, 22, or Phys. 2. 2 rec.; 1 lab.; 3 cr.

49. THESIS. An investigation or research of some mechanical engineering problem. Elective for Seniors in Mechanical Engineering. Prereq.: Permission of the Department. 2 cr.

51. MECHANICAL LABORATORY. Performance studies of steam engines and turbines, nozzles, and condensers. Application of the laws of thermodynamics to steam power plant equipment. Mr. Donovan and Mr. Valentine. 2 lab.; 2 cr.

53-54. POWER PLANTS. A study of the steam generating power plant dealing with its equipment and costs. For mechanical engineers. Mr. Donovan. Prereq.: M.E. 24. M.E. 53: 2 rec.; 2 cr. M.E. 54: 1 rec.; 2 lab.; 3 cr.

55-56. INTERNAL COMBUSTION ENGINES. Thermodynamics applied to spark ignition and compression ignition engines and gas turbines. Fuels, carburetion, fuel injection, combustion chambers, lubrication, cooling, and performance. Mr. Stolworthy and Mr. Fisher. Prereq.: M.E. 24. 2 rec.; 1 lab.; 3 cr.

59, 60, 61, 62. STUDENT BRANCH OF AMERICAN SOCIETY OF MECHANICAL ENGINEERS. An organization of Junior and Senior students. Preparation and presentation of addresses on Mechanical Engineering topics by members, and criticism by instructor of delivery, subject matter, and terms used. Required of Juniors and Seniors in Mechanical Engineering. Mr. Kauppinen. No credit.

65. ENGINEERING ECONOMY. The principles which form the basis of engineering procedures for obtaining the highest ratio of utility to cost. Mr. Donovan. Prereq.: Senior standing. 3 rec.; 3 cr.

66. Industrial Management. Principles and methods of industrial management, designed to give students a working knowledge of modern industrial practice, with particular emphasis on the engineering viewpoint. Prereq.: Senior standing. Mr. Plaisted. 3 rec.; 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

MEDICINE

(*See Pre-Medical Curriculum*)

METEOROLOGY

(*See Geology and Geography*)

MUSIC

Karl H. Bratton, *Professor;* Robert W. Manton, *Professor;* Donald E. Steele, *Associate Professor;* Irving D. Bartley, *Assistant Professor;* Elaine R. Majchrzak, *Assistant Professor;* David M. Smith, *Assistant Professor;* Allan Owen, *Instructor;* Vincent Bleecker, *Instructor;* Robert L. Garretson, *Instructor*

Music Organizations

Registration for musical organization courses should be completed during the registration period. These courses cannot be used to satisfy major requirements except in the Music-Education Curriculum. These organizations may be taken either for audit or for credit.

1, (1). University Symphonic Band. Open to all students on basis of individual tryouts. The University Band gives concerts during the college year, and also furnishes music for football games at home. Mr. Smith. Prereq.: Permission of instructor. 2 lab.; ½ cr.

2, (2). University Symphony Orchestra. Open to all students on a basis of individual tryouts. The Orchestra gives several concerts during the year and also accompanies the vocal groups and solo instrumentalists on various occasions. Mr. Bleecker. Prereq.: Permission of instructor. 2 lab.; ½ cr.

3W, (3W). Women's Glee Club. Open to all students interested in singing who fulfill the requirements of a tryout. Recommended for all women voice majors. Miss Majchrzak. Prereq.: Permission of the instructor. 2 lab.; ½ cr.

3M, (3M). Men's Glee Club. Open to all students interested in singing who fulfill the requirements of a tryout. Recommended for all men voice majors. Mr. Garretson. Prereq.: Permission of the instructor. 2 lab.; ½ cr.

5, (5). University Concert Choir. An advanced choral group devoted to the study and performance of the best classical and modern choral literature. Recommended for men and women voice majors. Mr. Bratton. Prereq.: Permission of instructor. 2 lab.; ½ cr.

6, (6). R.O.T.C. **Band.** Open only to Freshman and Sophomore men enrolled in the R.O.T.C. program, on basis of individual tryouts. This band furnishes music for all military functions, and other University activities when needed. Mr. Owen. Prereq.: Permission of instructor. 2 lab.; ½ cr.

7, (7). **Ensemble.** Small groups of instrumentalists and vocalists organized to provide advanced students experience in such groups as the Madrigal Singers, quartets (string, brass, woodwind, voice), and other combinations. Prereq.: Permission of the instructor. 2 lab.; ½ cr.

Music majors may count a maximum of 8 credits earned in music organizations toward graduation. Students earning credit in R.O.T.C. Band may count a maximum of 6 credits towards graduation, including band credit. Any other student may count not more than 4 credits towards graduation.

Applied Music

Register for the following courses as Mus. 23, etc.

Lessons in Applied Music are based on ½-hour private instruction. One semester hour of credit will be given for one lesson: two semester hours of credit will be given for two lessons. Five one-hour practice periods will be sought out by the music students themselves. The special semester fee for Applied Music is $25 for one lesson a week, and $50 for two lessons a week. These fees include the use of a practice room for the required preparations.

Majors in Applied Music are required to present 16 semester hours in applied music taken over a period of four years. Two lessons per week are required each semester. Four semester credits taken in the Freshman year are regarded as prerequisite to entrance into the Applied Music option.

Registration in Applied Music courses is open to all students in the University, subject to approval by the instructor. A student may register for the same course in successive semesters.

†23, (23). **Piano.** The methods of presentation and the material used vary with each pupil and his degree of advancement. With beginners, training is given in the fundamentals of pianoforte technique and in the reading of keyboard music. As early as is practicable, emphasis is placed on musical values, musicianship, and sound piano technique. For this purpose, the literature employed is selected from the masters. Musical understanding is developed and quality of performance is stressed. With the attainment of advanced technique, the student's repertory is broadened to include works of all periods of literature: pre-Bach, J. S. Bach, C. P. E. Bach, Scarlatti, Haydn, Mozart, Beethoven, the romantic composers, the post-romantic, and present-day contemporary composers. Mr. Steele, Mr. Bartley, Mr. Garretson. 1 or 2 lessons; 1-2 cr.

†24, (24). **Organ.** Students must possess reasonable keyboard facility before attempting the study of organ and should secure the permission of the organ instructor before enrolling for the course. The material used in the organ includes Graded Materials for the Organ by Rogers, preludes and fugues by Bach, sonatas by Mendelssohn as well as compositions by contemporary American composers. Since the aim of the course is primarily to prepare stu-

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†Students registered in formal and applied music courses are required to attend all student and faculty recitals as a part of the assigned work of the course.

dents for playing in church services, emphasis will be laid on hymn playing and also on providing suitable organ accompaniment for soloist, quartet, or chorus. During the Junior and Senior years the larger compositions by Franck, Widor and Guilmant will be studied. Mr. Bartley. 1 or 2 lessons; 1-2 cr.

†25, (25). VIOLIN. The choice of literature and method in violin teaching depends entirely on the individual pupil's background and ability, therefore no single course of study is set up as a requirement for all pupils. Emphasis is placed primarily on musicianship and musical values, and the development of a sound, reliable technique is a means to that end. Technique is developed in these lessons not so much through exercise and drill as it is through the best in violin literature, using as material representative sonatas from Bach to Hindemith, concertos of Mendelssohn, Mozart, Bruch, Tschaikowsky, etc., and numerous shorter solos. Mr. Bleecker. 1 or 2 lessons; 1-2 cr.

†26, (26). VOICE. Instruction in voice will seek to develop those qualities which are essential for intelligent interpretations, such as correct posture, breathing, pure tone, resonance, clear enunciation, and technical facility. Each voice is given the treatment best suited to its individual needs. A higher ideal than the perfection of mere mechanical skill is sought, namely a musicianly style of singing and a thorough appreciation of the best works of the masters, both classic and modern. Mr. Bratton and Miss Majchrzak. 1 or 2 lessons; 1-2 cr.

†27, (27). VIOLINCELLO, VIOLA, STRINGBASS. Since the literature for these instruments is somewhat more limited than that written for the violin, students are encouraged to arrange and transcribe material for their own use. Both the orchestral and solo literature for these instruments are studied, and the possibilities of the viola and bass as solo instruments are thoroughly explored. The basic beginners' method for cello is Dotzauer and for the bass is Simandl. The cello literature includes sonatas of Corelli, Franck, Grieg, Bach, etc., and concertos by Goltermann, Saint-Saens, Haydn, etc. Mr. Bleecker. 1 or 2 lessons; 1-2 cr.

†28, (28). WOODWIND. Courses in the technique and literature of clarinet, flute, oboe, bassoon, and saxaphone or any woodwind instrument are given. Mr. Owen. 1 or 2 lessons. 1-2 cr.

†29, (29). BRASS. Instruction is offered for any of the following instruments: trumpet, trombone, French horn, baritone, and tuba, or any brass instrument. Correct tone production, articulation, and musical interpretation are stressed. Mr. Smith. 1 or 2 lessons; 1-2 cr.

†30, (30). PERCUSSION. The study of the snare drum rudiments. The technique, tuning, and sticking of the pedal and hand timpani. Cymbals and all other percussion effects (claves, maracas, triangle, tambourine, woodblock, chimes, etc.) The playing of the glockenspeil, bells, or bell lyra, as well as xylophone is offered under this classification. Mr. Smith. 1 or 2 lessons; 1-2 cr.

Theory and Composition

†*9-10. SIGHTSINGING, EAR TRAINING, AND DICTATION I. A course designed to provide intensive training in the acquisition of the basic essentials of music.

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†Students registered in formal and applied music courses are required to attend all student and faculty recitals as a part of the assigned work of the course.

*Music 9-10 is normally prerequisite to Music 11-12, but the two may be taken simultaneously with the approval of the instructor in Music 11-12.

Special emphasis is placed upon development of rhythmical sense, the identification and singing of intervals, accurate response to melodic, harmonic, and rhythmical dictation, the basic laws of musical notation, familiarity with the pianoforte, elementary keyboard harmony, knowledge of scales, terminology, and elements of musical form. Recommended for students who wish to prepare themselves for intelligent listening to music and for participation in music activities such as glee clubs, etc. Mr. Garretson. 5 labs.; 1 cr. (*This course does not count for major credit.*)

†11-12. HARMONY I. The fundamental principles of the theory of music are embodied in the study of Harmony. It treats of the different chords and their relationships. The subdivisions are as follows: triads, inversions of the same, the entire seventh chord family and its inversion, 9th chords, augmented 6th chords, and some chromatic alteration and modulation will form the content of the course. Recommended for students who wish to prepare themselves for intelligent listening to music and for participation in musical activities such as glee clubs, orchestra, etc. Mr. Bleecker. Prereq.: Mus. 9-10 or its equivalent. 3 rec.; 2 cr.

†13-14. SIGHTSINGING, EAR TRAINING, AND DICTATION II. An extension of Music 9-10. Further training in basic elements of music. Continued emphasis on the rhythmical and melodic phenomena of the art and development of acuity and accuracy in perception and response. Mr. Bleecker. Prereq.: Mus. 9-10. 3 rec.; 1 cr.

†15-16. HARMONY II. Further study of chromatically altered chords, pedal point, and modulation, introduction of simple counterpoint in two parts and in both the 16th century and 18th century style. Contrapuntal studies will include three-part writing as its final objective. Mr. Manton. Prereq.: Mus. 11-12. 3 rec.; 2 cr.

†41-42. PRINCIPLES OF CONDUCTING. The development of conducting — physical aspects, equipment of conductor, fundamental gestures and beats. Baton techniques. The reading and analysis of full and condensed scores. Study of essential choral conducting techniques. Problems of choral organization. Psychology of rehearsal. Mr. Smith. 2 rec.; 1 cr.

†51-52. COUNTERPOINT, CANON, AND FUGUE. This seminar course will include free counterpoint in three and four parts, double counterpoint, the writing of simple two-part inventions, choral preludes, etc. The canonic and fugal studies will be based largely upon the works of Bach and will have as their objective the composition of a two-voiced, a three- and a four-voiced fugue. Mr. Manton. Prereq.: Mus. 15-16 or permission of instructor. 2 rec.; 2 cr.

†71-72. COMPOSITION. Form is the foundation, the skeleton, and support to imagination and expression in music. Through a study of form the student, in creating, learns to control his media of expression. The various harmonic forms, the variation forms, and the rondo and sonata forms will, in turn, serve as models for composition. Mr. Manton. Prereq.: Mus. 51-52 or permission of the instructor. 2 rec.; 2 cr.

†97-98. ORCHESTRATION. This course offers the study of instruments and methods of combining them into coherent arrangements arriving at successful

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†Students registered in formal and applied music courses are required to attend all student and faculty recitals as a part of the assigned work of the course.

balances for the band and orchestral arranger. The characteristics, range, and tone quality of the instruments are fully covered and transcriptions are made. Orchestral effects from the pens of our greatest composers are studied. Chorestration is offered during the latter part of the second semester. The techniques of writing for solo voice, for mixed voices, men's and women's voices, are taken up through the medium of arrangements, and original work. Mr. Owen. Prereq.: Permission of the instructor. 2 rec.; 2 cr.

History, Literature, and Appreciation

†33-34, (34), (33). The Appreciation of Music. Fundamentally a course to develop intelligent listening through formal analysis of the irreducible minimum of great musical masterpieces. A selection of the most important works of Bach, Handel, Haydn, Mozart, Beethoven, Schubert, Mendelssohn, Chopin, Berlioz, Liszt, Wagner, Brahms, Franck, Tschaikowsky, d'Indy, and many others, analyzed by the students and the instructor and played several times in the classroom. Mr. Manton. Two 1½ hr. rec.; 2 cr.

†43. Survey of Music in America. A survey of the development of music in the United States from Colonial times to the present day. The various influences such as the English tradition, the German era, the French impressionistic influence, and fianlly the quest for an American style will be presented and discussed together with the music of the most representative composers. Mr. Manton. 2 rec.; 2 cr.

†45, 46. Music History and Literature. A study of the actual systems, spirit, and content of the music of a period rather than resumes of biography and critical evaluations. Music of the Ars Nova period, the Netherlands and Roman Masters, the Renaissance, opera and oratorio, Bach and Handel, the classical and romantic composers, and the music of the late nineteenth century. Mr. Manton, 2 rec.; 2 cr.

†47, 48. Survey of Pianoforte Literature. A course which covers, through lecture and demonstration, the history and development of keyboard literature from Bach to the present. A discussion and performance of the works of Bach, the Sonatas and Concertos of Haydn, Mozart, Beethoven, Schubert, the Romantic composers, and of contemporary writers. Mr. Steele. 2 rec.; 2 cr.

†80. Twentieth-Century Music. A study of the music of the twentieth century, including its literature, its trends, and an analysis of techniques, style, forms, and expressions. Mr. Steele. 2 rec.; 2 cr.

†(83). The Life and Works of Beethoven. This course will include a study of the piano sonatas, symphonic works, and the string quartets of Beethoven. Lectures, analysis, reports, required readings, and listening will constitute the techniques of presenting the course. Mr. Manton. 2 rec.; 2 cr.

†87, 88. History of Opera and Oratorio. A history of the opera and the oratorio beginning in Italy in the 16th century and culminating in modern opera and oratorio. This includes Comic, Grand, and Romantic Opera, and composers such as Handel, Mozart, Verdi, Puccini, Wagner, and Richard Strauss. The development of the recitative and aria, styles, and trends will be discussed. Miss Majchrzak. 2 rec.; 2 cr. (Not offered in 1954-1955.)

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†Students registered in formal and applied music courses are required to attend all student and faculty recitals as a part of the assigned work of the course.

Music Education

The Department of Music offers a four-year curriculum for teachers of elementary and secondary school music. (See Music-Education Curriculum.)

Register for the following courses as Mu-Ed. 91, etc.

†Music-Education (Mu-Ed) 91. Problems in the Teaching of Elementary School Music. Aims, scope, and organization of materials and activities in the elementary schools in keeping with modern trends in educational philosophy. Particular attention will be given to the child voice, its care and development. A thorough study and demonstration of materials and methods for the various grades will be made. Observation of elementary school music. Mr. Garretson. Prereq.: Educ. 58. 3 rec.; 3 cr.

†Music-Education (Mu-Ed) (92). Problems in the Teaching of Secondary School Music. The application of educational principles to the teaching and learning of music, and the organization of the music curriculum on the junior and senior high-school levels. Consideration is given to the adolescent voice and the classification of voices; the selection of vocal and instrumental materials to fit the needs of the individual group, in order to insure the maximum growth and musical development of the students; and the building of unified concert programs. A discussion of problems of administration and management, and the relationship of the teacher to school and community. Observation of music programs in secondary schools. Mr. Garretson. Prereq.: Education 58. 3 rec.; 3 cr. (*This is a first semester course.*)

†Music-Education (Mu-Ed) 95. Teaching of Stringed Instruments. A demonstration course in class-teaching of stringed instruments designed to simulate classroom situations and methods as far as possible. Mr. Bleecker. 2 rec.; 2 cr.

†Music-Education (Mu-Ed) (96). Teaching of Woodwind Instruments. A study of correct tone production and technique of woodwind instruments. Materials and procedures for class and individual instruction will be emphasized. Consideration will be given to the school band as a concert organization. Mr. Owen. 2 rec.; 2 cr. (*This is a first semester course.*)

†Music-Education (Mu-Ed) 97. Teaching of Brass and Percussion Instruments. A study of correct tone production and technique of brass instruments and of rudimentary percussion technique. Materials and procedures for class instruction will be emphasized. Mr. Smith. 2 rec.; 2 cr.

NATURE STUDY

(*See Biology, Botany, Forestry, and Zoology*)

NURSING

(*See Nursing Curriculum*)

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†Students registered in formal and applied music courses are required to attend all student and faculty recitals as a part of the assigned work of the course.

OCCUPATIONAL THERAPY

(See also The Arts)

These courses are for students in the Occupational Therapy Curriculum; elective for others by permission only.

Register for the following courses as O.T. 1, etc.

1. Crafts. A basic course in crafts such as cord-knotting, crocheting, embroidery, gimp-braiding, knitting, netting, paper craft, and tatting, adapted for use in Occupational Therapy. Miss Drew. 2 lab.; 2 cr.

2. Crafts. Basic instruction in crafts such as bookbinding, chip-carving, fly-tying, hooking, leather-work, and puppetry. The therapeutic application of these crafts is stressed. Miss Drew and Mrs. Goodrich. 3 lab.; 3 cr.

5. Crafts. Basic instruction in copper-etching, metal tooling, metal work, jewelry, and stenciling as applied to Occupational Therapy. Mrs. Watson. 3 lab.; 3 cr.

6. Crafts. A basic course in basketry, seat-weaving, and weaving, stressing the therapeutic application of these crafts. Miss Drew and Mrs. Goodrich. 3 lab.; 3 cr.

7-8. Elementary Processes in Wood and Plastics. A basic course in design and construction of wood and plastic objects, including a study of the nature and properties of these materials and the processes of cutting, shaping, fitting, and finishing. Practice and demonstrations cover the operation of hand and power tools, safety precautions and other problems of shop management to be encountered in Occupational Therapy. Mr. Brett. 2 lab.; 2 cr. (Not offered in 1954-1955.)

(10). Lettering and Printing. Freehand lettering, hand- and press printing; operation of various duplicating devices; silk screen process; poster design. A survey of graphic arts methods and processes as employed in Occupational Therapy. Mr. Moehl. 2 lab.; 2 cr. (Offered in Fall Semester 1954-1955.)

15-16. Ceramics and Modeling. Design and construction. Methods of preparing and working clay, and the uses of pottery equipment best suited to application in Occupational Therapy work; hand puppets and marionettes. Mr. Scheier. 2 lab.; 2 cr. (Not offered in 1954-1955.)

41. Theory of Occupational Therapy. General information on history and orientation to Occupational Therapy, service hospitals, recreation activities, general medicine and surgery, and sensory disabilities. Instruction trips to hospitals and treatment centers. Miss Drew. 3 lec. or rec.; 3 cr.

44. Theory of Occupational Therapy. General information on psychiatry, mental deficiency, geriatrics, tuberculosis, cardiac conditions, pediatrics, and rehabilitation. Instruction trips to hospitals and treatment centers. Miss Drew. Prereq.: O.T. 41. 3 lec. or rec.; 3 cr.

46. Theory of Occupational Therapy. General information on cerebral palsy, poliomyelitis, degenerative neurological conditions, general physical disabilities, organization and administration (including a brief survey of the organization of a small institutional library). Instruction trips and pre-clinical training arranged. Miss Drew. Prereq.: O.T. 44. 3 lec. or rec.; 3 cr.

49. 50. Clinical Subjects. Basic information concerning the etiology, pathology, symptoms, and treatments of disease. Introductory lectures to acquaint students with medical terminology are followed by a study of general medical and surgical conditions, orthopedics, ophthalmology, otology, and psychiatry. University Physician and visiting specialists. Prereq.: Zool. 17-18, or 17-20, O.T. 41 and 44 (which may be taken concurrently). 2 lec.; 2 cr. (Alternate years; offered in 1954-1955.)

PHILOSOPHY

Donald C. Babcock, *Professor;* Gibson R. Johnson, *Associate Professor*

1, 2. Introduction to Philosophy. Designed for orientation in the field of Philosophy, this course gives some time to each of several subjects associated with philosophic thoroughness and breadth of thought. Among these are: (1) ways of acquiring knowledge; forms of logical thought; (2) the nature of ethics; (3) the history of ideas; (4) chief hypotheses concerning the nature of mind and matter. Wherever possible, practical application to the problems of human living will be made. Mr. Babcock. 3 lec. or rec.; 3 cr. (*Not open to Freshmen.*)

4. Ethics. Human beings behave as if there were standards by which conduct could be evaluated. What are "values"? What standards are there? What significance have they? Are "right" and "wrong" in any sense universal? How can we find out? This course deals with these questions, but makes application constantly to everyday problems of individual and social living. Mr. Babcock. 3 lec. or rec.; 3 cr. (*Not open to Freshmen.*)

5, 6. Philosophy of Religion. This course undertakes three tasks: (1) to investigate the philosophic basis of religion in general, without particular reference to any specific religion; (2) a more detailed study of theism as the most fruitful variety of religious thought; (3) presentation of the Sacramental Theory of values, as a contribution to meet the need for an ordered thought-way for the contemporary world. Mr. Babcock. Prereq.: Any course in Philosophy. 3 lec. or rec.; 3 cr. (Not offered in 1954-1955.)

11, 12. History of Religions. Religion as an historic force in society. The nature of religion, its origins, and early development treated in connection with primitive social history. A study of the principal religions of the world, exclusive, for the most part, of Christianity. Chief attention given to Hinduism, Buddhism, Zoroastrianism, Confucianism, and Mohammedanism. The history, literature, and philosophy of the Oriental civilizations and culture as a background. Mr. Johnson. 3 lec. or rec.; 3 cr. (Alternate years; not offered in 1954-1955.) (*Not open to Freshmen.*)

13, 14. Historical Origins and Development of Christianity. The life, literature, religion, and social development recorded in the Old Testament are studied as a cultural background. An investigation of the historic data existing concerning the life, character, and teaching of Jesus. The growth and expansion of the Christian movement. Designed to furnish students an opportunity to evaluate their own religious heritage in the light of contemporary thought, and to make special study of particular intellectual problems. Mr. Johnson. 3 lec. or rec.; 3 cr. (Alternate years; offered in 1954-1955.) (*Not open to Freshmen.*)

19. The Liberal Tradition in Western Thought. This course deals with the nature of the important but elusive movement of thought called liberalism;

in its several aspects — intellectual, religious, economic, political, etc. It will be concerned with the limits of freedom, the nature of democracy, and antidemocratic forces. American patterns of liberalism, with their English antecedents. The modern dilemma of liberalism in a changing social order is referred to throughout. Mr. Babcock. 3 lec. or rec.; 3 cr. *(Not open to Freshmen.)*

51, 52. SEMINAR. Intensive study of a selected topic or field. Designed for those who wish to cultivate the philosophical way of life for further self-improvement. Open only to students who have had a course in philosophy, and by permission of the instructor. Mr. Babcock. 2 lec. or discussion; 2 or 3 cr. (Not offered in 1954-1955.)

55, 56. PHILOSOPHY OF HISTORY. (1) Some of the less obvious aspects of chronology; periodizing as a means of interpreting history; (2) historical geography; (3) culture-history, including the historical side of everyday life; (4) the philosophy-of-history proper, or a study of some of the ways in which history as a whole has been viewed, including both deterministic theories and the study of biography. Mr. Babcock. 3 lec. or discussions; 3 cr.

PHOTOGRAPHY

(See The Arts)

PHYSICAL EDUCATION FOR MEN

CARL LUNDHOLM, *Director and Professor of Physical Education and Athletics;* PAUL C. SWEET, *Professor;* HENRY C. SWASEY, *Associate Professor;* CLARENCE E. BOSTON, *Associate Professor;* ROBERT W. KERR, *Assistant Professor;* HORACE MARTIN, *Assistant Professor;* A. BARR SNIVELY, *Assistant Professor;* EDWARD J. BLOOD, *Assistant Professor;* ANDREW MOORADIAN, *Instructor*

REQUIREMENTS. Physical Education is required of all Freshmen and Sophomore men students and first-year students in the Two-Year Curriculum in Agriculture. Sophomore men will not be held to the Physical Education requirement in 1954-1955. Each student must provide himself with an activity suit consisting of grey sleeveless jersey, gray trunks, white woolen socks and rubber-soled tennis or basketball shoes. This suit must be worn at all classes in Physical Education.

31, 32. PHYSICAL EDUCATION. Development of the organic system generally; stimulation of the neuromuscular system through physical activity; encouragement of a proper attitude toward play; development of an appreciation of physical activities as worthwhile leisure-time recreation. *Required of Freshmen.* 2 periods; ½ cr. Students passing will get a grade of cr.

33, 34. PHYSICAL EDUCATION. Continuation of P. E. 31, 32. Elective for Sophomores. 2 periods; ½ cr. Students passing will get a grade of cr.

Teacher Preparation Courses

Required of students registered in the University Physical Education Teacher Preparation Curriculum for Men. Elective for other students by special permission from the Director of Physical Education and Athletics.

23. PRINCIPLES OF PHYSICAL EDUCATION. The aims, objectives, and principles of Physical Education and the historical factors which have influenced the physical life of nations. Mr. Kerr. 3 lec.; 3 cr.

40. Winter Sports. Instruction and practice in ski jumping, downhill, slalom, and cross country skiing, and snowshoeing. Conditioning of men, waxing of skis, and selection and care of equipment. The organization and management of winter carnivals and other competitions. Special emphasis on methods of teaching skiing. 1 rec.; 2 lab.; 2 cr. (Not offered in 1954-1955.)

45. Football. A history of football with consideration of its educational implications and an analysis of the various systems of play. Instruction in team and individual offensive and defensive fundamentals. The rules, theory, strategy, generalship of team play, and the responsibilities of the coach for the physical welfare of the team. Mr. Boston. 1 rec.; 2 lab.; 2 cr.

46. Baseball. Theoretical and practical consideration of the basic principles of batting and fielding; the fundamentals of each position; special stress on problems involving team play, coaching methods, physical conditioning, and rules; a history of the game with a consideration of its educational values. Mr. Swasey. 1 rec.; 2 lab.; 2 cr.

47. Track and Field Athletics. Instruction and practical demonstrations in starting, sprinting, middle distance and distance running, relay racing, hurdling, high and broad jumping, pole vaulting, shot putting, discus, hammer and javelin throwing. Methods of preparing contestants for the various events. Mr. Sweet. 1 rec.; 2 lab.; 2 cr.

48. Basketball. History of basketball with a consideration of its educational values. Theory and practice in the fundamentals of individual offense and defense. The various styles of team offense and defense and rules of the game. Problems in handling and conditioning a team. Mr. Swasey. 1 rec.; 2 lab.; 2 cr.

61. Problems of Teaching in Physical Education. Methods and materials of instruction, theories of play, and actual practice for the successful teaching of recreational activities in school, on the playground, and in the community. Studies of activities adapted to different levels or maturity. Mr. Kerr. 3 rec.; 3 cr.

63. Care and Prevention of Injuries. Nature and causes of injuries incident to physical activities, the common hazards of play, and preventive measures for children and athletes are discussed. First aid principles are presented. Elective for Seniors who have taken one of the following: P.E. 40, 45, 46, 47, 48. Mr. Blood. 2 rec.; 2 cr.

65. Administration of Physical Education in Secondary Schools. The aims and objectives of health and physical education. Organization and supervision of a complete unified program of health and physical education including the legal aspects, intra-mural and inter-scholastic athletics, medical problems, budgeting, financing, maintenance of equipment, publicity programs, and office management. Each student will be given an opportunity to serve on a committee to draw up an original program of health and physical education in a theoretical or actual situation found in some secondary school. Prereq.: Zool. 17-18; P.E. 23 and 61; and two courses in the coaching of sports. These last may be taken concurrently. Mr. Lundholm. 3 rec.; 3 cr.

93, (93). Education-Physical Education (Ed-PE). Directed Teaching in Physical Education. Given in the Department of Physical Education and Athletics for Men. Prereq.: Zool. 17-18; P.E. 23 and 61. The student must have completed the methods course in the sport which he is directing or take the course concurrently. 3 cr.

PHYSICAL EDUCATION FOR WOMEN

Marion C. Beckwith, *Director and Professor of Physical Education for Women;* Evelyn Browne, *Associate Professor;* Caroline S. Wooster, *Associate Professor;* Barbara K. Newman, *Assistant Professor;* Carol E. Gordon, *Assistant Professor;* Marilyn W. Black, *Instructor;* Joan L. Blanchard, *Instructor;* Elizabeth F. MacKinnon, *Instructor;* Sylvia Masters, *Instructor*

The Department of Physical Education for Women aims to develop in each individual the physical, social, and mental qualities which will enable her to meet successfully the demands of modern society. The course includes recreational and leisure-time activities, vigorous team sports and gymnastics, rhythmic and dance activity, and the opportunity to participate in club activities which are provided primarily for the more highly skilled. This program is supplemented by the extra-curricular competition sponsored jointly by the Women's Recreation Association and the Department.

Requirements. All women students are required to complete at least one credit of physical activity for each of the first six semesters they attend the University. Freshmen women should register for P.E. 1, 2; Sophomores for P.E. 3, 4; and Juniors for P.E. 5, 6. A second activity may be elected each semester for additional credit. (P.E. 11, 12, 13, 14, etc.) Except by special permission, the same activity shall not be credited more than twice.

Physical Examination. Each student must, before entering, have had a physical examination by a physician. A posture test will be given by the Physical Education staff. Individual gymnastics is required of each Freshman whose physical condition indicates this need. Students with physical disabilities must follow the same procedure as other students including registration for Physical Education. In most cases, modified activities are recommended by the University Physician.

Motor Ability Test. All students are expected to take the Humiston Motor Ability Test the fall that they enter the University.

Advanced Instruction. To provide for the more highly skilled student and to encourage the interest and ability of the less skilled, the Department of Physical Education for Women includes in its program numerous club and interclass activities in which Advanced Instruction is given by a member of the teaching staff. Membership: Open to any University student. Qualifications: Club standards or membership of class squad.

Clubs: Counselors' Club — Instructor, Miss Gordon; Dance Club — Instructor, Miss Masters; Riding Club — Instructor, Miss Browne; Rifle Club — Instructor, Miss Browne; Durham Reelers — Instructor, Miss Masters; Ski Club — Instructor, Miss Newman; W.R.A. — Instructor, Miss Gordon and staff.

Women students following any Teacher Training Curriculum in the University are urged to elect for required Physical Education the following activities: folk dancing, social recreation, volleyball, hockey, basketball, and American square and country dancing.

Required Costume, Fees, and Equipment. Special gymnasium uniforms consist of blue cotton tennis-type dress and shorts, white socks, and regulation gymnasium sneakers. Students are required to furnish their own individual equipment for such activities as tennis, skiing, and skating. Equipment is furnished for golf, fencing, badminton, hockey, archery, lacrosse, riflery, and softball. The special riding fee is $25 a quarter for two lessons a week.

1, 2, 3, 4, 5, 6. Physical Education. Students should register for one activity (meeting two hours a week) from the lists below. One additional hour of Fundamentals (Freshmen) or Survey of Dance (Sophomores) will be arranged by the Department. 3 hrs.; 1 cr.

Activity Courses

(elect one each quarter)

First Quarter: Archery, badminton, golf, modern dance, hockey, individual gym, riding* (beg. + elem. + inter.), tennis (elem. + inter.), touch football.

Second Quarter: Basketball, badminton (elem. + inter.), elementary games, fencing, folk dancing, gymnastics, modern dance (elem. + inter.), individual gym, riding* (beg. + elem. + inter.), riflery, skating, skiing (beg.), social recreation, stunts and tumbling.

Third Quarter: American square and country dance, badminton (elem. + inter.), dance composition, fencing, individual gym, modern dance (elem. + inter.), recreation workshop, riding* (beg. + elem. + inter.), riflery, skiing (beg. + elem. + inter.), social recreation, stunts and tumbling, volleyball.

Fourth Quarter: Archery, badminton, campcraft, dance composition, golf (elem. + inter.), individual gym, lacrosse, riding* (beg. + elem. + inter.), softball, tennis (elem. + inter.).

Required of Freshmen, Sophomores, and Juniors. 3 periods; 1 cr.

7, 8. Physical Education. Elect courses from the list under P.E. 1, 2. Elective for Seniors. 2 hr. 1 cr.

11, 12, 13, 14, 15, 16, 17, 18. Physical Education. Elective courses open to Freshmen, Sophomores, Juniors, and Seniors respectively may be chosen from the lists under 1, 2, 3, 4, 5, 6. 2 hr.; 1 cr.

Theory Courses

23. Principles of Physical Education. See course description under Department of Physical Education for Men.

24. Organized Camping. The methods, objectives, and purposes of organized camping; standards, facilities, equipment, food, sanitation, health, and saftey requirements; program planning and leadership qualifications; integration of camping in the public schools. Mrs. Wooster. Elective for Sophomores, Juniors, and Seniors. 3 lec. or rec.; 3 cr.

(36). Recreation Leadership. Organization, program planning, and administration of community recreation and playgrounds; philosophy of recreation. Mrs. Black. Elective for Sophomores, Juniors, and Seniors. 3 lec. or rec.; 3 cr.

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*See *Required Costume, Fees, and Equipment,* above.

53, 54. The Theory of Teaching Dance. A survey of methods, materials, and techniques in teaching dance. Includes instruction in performance and teaching of rhythms, social and folk dance, first semester; square and modern dance, second semester. Miss Masters. Prereq.: concurrent with second quarter: Country Dance; concurrent with third quarter: Modern Dance (elem.); concurrent with fourth quarter: Modern Dance (inter.) Open to Physical Education majors or by permission of instructor. 1 lec.; 2 lab.; 2 cr.

55. Remedial Gymnastics. The adaption of exercise to individual needs, capacities, and limitations; causes and treatment of physical abnormalities. Theory and technique of massage. Mrs. Wooster. Prereq.: Zool. 17-18; Zool. 19 or concurrently. 2 lec. or rec.; 2 lab.; 3 cr.

56. Health Education. A general health course designed to acquaint the student with principles, teaching methods, and materials of health education and hygiene in the school. It includes instruction in first aid, safety education, physical inspection, medical treatment and prevention of disease. Miss Blanchard. Open to Physical Education majors. Prereq.: Zool. 17. 3 lec. or rec.; 3 cr.

63, 64. The Theory of Teaching Team Sports for Women. The methods involved in the teaching of team sports and lead-up games with emphasis on coaching methods and techniques of officiating. Includes discussion of equipment, history, tactics, and rules of each sport. Miss Gordon. Prereq.: Elementary courses in team sports. 2 lec. or rec.; 2 lab.; 2 cr.

(66). Administration of Physical Education in Secondary Schools. Administrative relationships and methods in the conduct of physical education, health education, and recreation. Preparation of general administrative policies, in the light of past and present philosophies and in regard to current programs, facilities, and equipment, selection of staff and public relations. Miss Browne. 3 lec. 3 cr.

73, 74. The Theory of Teaching Individual Sports for Women. A study of the methods involved in the teaching of tennis, badminton, skating, skiing, golf, and archery. The history, equipment, courtesies, rules, techniques, and strategy of each sport will be discussed. Miss MacKinnon and Miss Beckwith. Prereq.: Elementary work in the courses listed above. Open to Junior or Senior majors or others by permission of instructor.. 1-2 lec. or rec.; 1-2 lab.; 1-2 cr.

P.E.-Ed. 91. Problems in the Teaching of Physical Education for Women. The methods, material, and organization of a comprehensive program of activities for use primarily in the elementary school and in recreation programs. Miss Newman. 3 lec. or rec.; 3 cr.

Ed.-P.E. (92), 92. Directed Teaching of Physical Education for Women. Opportunity for teaching Physical Education activities under direction, primarily in the elementary and secondary schools. Miss Newman. Prereq.: P.E.-Ed. 91 or concurrently. 1 lec. or rec.; 2-5 lab.; 3-6 cr.

P.E. (96), 96. Recreation Field Work. Opportunity for participation in the planning and operation of a variety of recreation programs, under direction, in nearby clubs and community centers. Mrs. Black. 1 lec. or rec.; 2 lab.; 3 cr.

PHYSICAL SCIENCE

(See Geology and Geography)

PHYSICS

Frederic A. Scott, *Professor;* Horace L. Howes, *Professor Emeritus;* Harry H. Hall, *Professor;* William H. Hartwell, *Associate Professor;* David G. Clark, *Associate Professor;* John A. Lockwood, *Associate Professor;* John A. Karas, *Assistant Professor;* Frank R. Woods, *Assistant Professor;* Wilbur H. Wright, *Assistant Professor*

1-2. Introductory Physics. Mechanics, properties of matter, heat, magnetism, electricity, wave motion, sound, and light. Demonstration lectures, laboratory and recitation. A knowledge of high-school algebra and plane geometry is essential. This course is not intended for students in the College of Liberal Arts who expect to complete major requirements in Physics. 2 lec.; 1 rec.; 1 lab.; 4 cr.

9, (9). Elementary Physics. An elementary course with emphasis on selected topics from the various fields of physic. A knowledge of high-school algebra and plane geometry is a prerequisite. Open to students in the College of Agriculture only. 1 lec.; 2 rec.; 1 lab.; 4 cr.

21-22. General Physics. Mechanics; heat; light; wave motion; sound; electricity and magnetism. Prereq.: Math. 17 either passed or taken concurrently. Cannot be taken for major credit in the College of Liberal Arts. 2 lec.; 3 rec.; 1 lab.; 6 cr.

43-44. Intermediate Laboratory. This course is intended to augment the student's contact with physical equipment and improve his laboratory technique in precise measurements. Experiments performed largely have bearing on medical problems. Electricity and optics are stressed to a large degree. Prereq.: Phys. 1, 2. Open only to pre-medical students. 1 lab.; 1 cr.

64. Electrical Measurements. Experiments on the use of precision potentiometers, the constants of sensitive galvanometers, low resistance by Kelvin double bridge, high resistance by the method of leakage and by direct deflection, the use of alterating current bridges for measuring capacity, self and mutual inductance and frequency, the characteristics of certain photo-electric cells. Prereq.: Phys. 21-22. 1 lec.; 1 lab.; 3 cr.

81. Optics. Geometrical optics covering first order theory of optical systems; aberrations; theory of stops; photometry. Physical optics covering wave propagation; interference; diffraction polarization. Prereq.: Math. 19 passed or taken concurrent. 3 rec. 1 lab.; 4 cr.

82. Heat. Thermometry, pyrometry, calimetry, radiation, heat conduction and thermodynamics. Prereq.: Phys. 21-22; Math. 19, 20 passed or taken concurrently. 3 rec.; 1 lab.; 4 cr.

83-84. Theory of Electricity and Magnetism. Electrostatics, magnetostatics, dielectic theory, electromagnetics, magnetic circuits, alternating currents, complex impedance, thermoelectricity, electro-magnetic field. Prereq.: Phys. 21-22; Math. 19, 20 passed or taken concurrently. 3 lec.; 1 lab.; 4 cr.

85-86. Physical Mechanics. An analytical treatment of classical mechanics covering the methods of statics and dynamics of particles and rigid bodies, both in a plane and in space, and the application of these methods to physical problems; oscillations; constrained motion; generalized co-ordinates and Lagrange's Equations. Prereq.: Math. 19-20 passed or taken concurrently. 3 rec.; 3 cr.

91-92. Modern Physical Theories. Recent developments in physics including relativity, quantum theory, introduction to wave mechanics, atomic and molecular spectra, nuclear physics and cosmic rays. Prereq.: Phys. 83-84 or equivalent. 3 rec.; 3 cr.

93-94. Theoretical Physics. An introduction to the application of mathematics to physics, including such topics as advanced dynamics, theory of vibrations and sound, kinetic theory, etc. Prereq.: Math. 19-20 and Phys. 85-86 or its equivalent. 3 cr.

95-96. Advanced Laboratory. Laboratory work of research type. Special problems are assigned to the individual student who is placed on his own. Prereq.: Senior standing in Physics in College of Technology. 2 lab.; 2 cr.

97. Electrical Discharge Through Gases. Properties of gaseous ions, motion of electrons in gases, the discharge tube, positive and negative rays, thermionic emission, photo-electricity, critical potentials, etc. Prereq.: Phys. 83-84. 3 rec.; 1 lab.; 4 cr.

99. Special Topics. A course designed to cover any selected topics not sufficiently well covered in a general course. Prereq.: Math. 19-20 passed or taken concurrently. Senior standing in Physics in College of Technology. 1, 2, or 3 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

POLITICAL SCIENCE

(*See Government*)

POULTRY HUSBANDRY

Winthrop C. Skoglund, *Professor;* Richard C. Ringrose, *Professor;* Fred E. Allen, *Professor;* Allan C. Corbett, *Associate Professor;* Walter M. Collins, *Assistant Professor;* William R. Dunlop, *Assistant Professor*

2. Farm Poultry. The general principles of Poultry Husbandry and their practical application with emphasis on factors of culling, breeding, housing, feeding, marketing, diseases and parasites, incubation and management. Mr. Skoglund. 2 lec.; 1 lab.; 3 cr.

6. Poultry Feeding. The principles of feeding; analysis of recent experimental work and current feed problems. Mr. Ringrose. 2 lec.; 1 lab.; 3 cr. (Alternate years; offered in 1954-1955.)

7. Poultry Housing. Design and construction of poultry houses and equipment; costs of materials; management principles. Mr. Skoglund. 1 lec.; 1 lab.; 2 cr. (Alternate years; offered in 1954-1955.)

17. Poultry Judging and Selection. Theory and practice in selection of poultry for egg and meat production. A judging team participates in an intercollegiate contest. Mr. Collins. 2 lec.; 1 lab.; 3 cr.

18. Incubation and Brooding. The principles involved in incubation and brooding of poultry; embryonic development. Students individually operate incubators and care for groups of chicks. Mr. Skoglund. 2 lec.; 1 lab.; 3 cr. (Alternate years; not offered in 1954-1955.)

19. Poultry Marketing. The preparation of poultry and eggs for market. Egg qualities and grades, candling and packaging; egg and poultry market conditions; practical instruction in killing, picking, and dressing. Mr. Ringrose. 2 lec.; 1 lab.; 3 cr. (Alternate years; not offered in 1954-1955.)

20. Poultry Diseases. The anatomy of the fowl; diseases and parasites encountered in poultry practice; methods of prevention and control. Mr. Corbett. 3 lec.; 1 lab.; 4 cr. (Alternate years; not offered in 1954-1955.)

23, 24. Poultry Practice. Practice work at the University Poultry Plant in the hatching, rearing, and care of chickens. Mr. Skoglund. Five hours a week of practical work. 2 cr. (Note: By permission, students with previous practical poultry experience may substitute 2 semester credits of electives for this course.)

26. Poultry Management. The application of successful business principles to poultry farming; study of surveys and production costs. As a part of the laboratory work, visits are made to numerous poultry farms in order to study various types of enterprises. Mr. Skoglund. 2 lec.; 1 lab.; 3 cr. (Alternate years; offered in 1954-1955.)

27, 28. Poultry Seminar. Students abstract experimental data and report on various current topics. Department staff. 1-hour conference; 1 cr.

29. Poultry Breeding. The genetic principles involved in breeding for egg and meat production, including practical application and demonstration. Mr. Collins. 2 lec.; 1 lab.; 3 cr. (Alternate years; offered in 1954-1955.)

53, 54. Poultry Problems. Students are given a selection of various problems and are required to compile and present accurate and detailed information in their solution. Department staff. 1 to 3 cr.

56. Turkey Production. Subject matter covered includes varieties and their commercial importance; breeding methods, including the National Turkey Improvement Plan; brooding and rearing methods; feeding, housing, and management practices. Mr. Ringrose. 2 rec.; 2 cr. (Alternate years; not offered in 1954-1955.)

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

PSYCHOLOGY

Herbert A. Carroll, *Professor;* George M. Haslerud, *Associate Professor;* Paul H. McIntire, *Assistant Professor;* Lenin A. Baler, *Assistant Professor;* Robert J. Dowd, *Assistant Professor;* Warren C. Bower, *Instructor;* John Coules, *Instructor*

1-2. General Psychology. The systematic study of human behavior, especially with reference to the fundamental principles governing the development of the individual, learning, thinking, emotion, motivation, sensation and perception. Attention is paid to concrete applications of these principles. The second semester is devoted to an examination of individual differences as influenced by age, sex, race, nationality, and class membership. Particular attention is given to tests and measurements employed in appraising the individual. Mr. Dowd, Mr. Haslerud, Mr. Baler, and Mr. Coules. 3 lec.; 3 cr. Primarily for Freshmen and Sophomores. *This course cannot be counted for major credit.*

32. Industrial Psychology. The psychological principles involved in the selection and placement of personnel, the development and maintenance of morale, and the training and education of the employee. Special attention is given to problems in Hotel Administration. Mr. Coules. Prereq.: Psych. 1. 3 lec. 3 cr. *Not open to Freshmen.*

47, (47). Mental Hygiene. An examination of the fundamental emotional satisfactions desired by human beings and a consideration of the several ways in which these desires are thwarted. The mental conflicts growing out of such thwartings and ways of resolving them will be the central theme of the course. Specific applications of the principles of mental health will be made to the problems of college students. Mr. Carroll and Mr. Dowd. 3 lec.; 3 cr. *Not open to Freshmen.* (*This course cannot be used to satisfy major requirements.*)

48. Psychopathology. A systematic examination of the more severe instances of maladjustment as found in advanced stages of the psychoneuroses and in the forms of insanity categorized as functional and organic psychoses. The search for causes, the interpretation of symptoms, and the process of treatment for these mental disorders are described as interdependent aspects of professional work with the abnormal. Mr. Baler. Prereq.: Psych. 47. 3 lec.; 3 cr. *Not open to Freshmen.*

51. Psychology of Childhood. The mental processes and reactions of the normal child from birth to adolesence studied in order to obtain a comprehensive understanding of the development of the personality of the child. Special emphasis is placed on problems of parents and teachers and the importance of childhood for later adjustment. Mr. Coules. Prereq.: Psych. 1. 3 lec.; 3 cr.

52. Psychology of Adolescence. An examination of the physical, psychological, and social development of the individual during the period between childhood and maturity, and the implications for the individual, parent, teacher, and community of the problems characteristic of this period. Mr. Dowd. Prereq.: Psych. 2. 3 lec.; 3 cr.

57. Experimental Psychology. A study of experimental work in Psychology, supplemented by class experiments. Emphasis will be placed on scientific method and experimental procedure. Mr. Haslerud. Prereq.: Psy. 2. 1 lec.; 2 lab.; 3 cr.

58. Psychology of Learning. A study of experiments on the modification of behavior with emphasis on the practical implications for more insights, guided learning, better memory, and extended transfer. Mr. Haslerud. Prereq.: Psych. 2. 3 lec.; 3 cr.

63. Differential Psychology: The Feebleminded and the Gifted. A study of individual differences in intellectual development focusing on the subnormal and the gifted as deviants from the norm. Mr. Dowd. Prereq.; Psych. 2 and 51. 3 lec.; 3 cr.

67. Statistics in Psychology. A study of the problems and methods involved in the statistical treatment of quantitative data in Psychology. Both the

computation and interpretation of elementary statistical measures will be stressed. Mr. Coules. Prereq.: Psych. 2. 2 lec. or rec.; 1 lab.; 3 cr.

74. PSYCHOLOGY OF PERSONALITY. A scientific approach to the analysis of personality in terms of structure, developmental dynamics, and methods of measurement. Mr. Baler. Prereq.: Psych. 2 and 47. 3 lec.; 3 cr.

78. PHYSIOLOGICAL PSYCHOLOGY. A study of the functions of the nervous system and its effect on the discriminative and motivated aspects of behavior. Emphasis will be placed on vision, audition, feeling, emotion, sex, and hunger. Mr. Coules. Prereq.: Psych. 2. 2 lec.; 1 lab.; 3 cr.

83. SYSTEMATIC PSYCHOLOGY. The complex expansion of contemporary psychology as seen in historical perspective. A consideration of some of the major antecedents in philosophy, theology, and the physical sciences. Emphasis is placed on the subsequent extensive development of psychology in the United States in the form of complementary schools and systems of thought and research. Mr. Baler. Prereq.: Psych. 2. 3 lec.; 3 cr.

87. APPLIED PSYCHOLOGICAL TESTING. The planning and execution of testing programs in the institutional setting. Special emphasis upon practical and validating data. The conference-laboratory method will be emphasized. Students will be required to complete a project that will bear definite relationship to the local institutional program. Mr. McIntire. Open only to practicing teachers, counsellors, guidance and personnel workers. Class enrollment limited to 20 students. Prereq.: Permission of instructor. (*Offered only as an Extension course.*)

88. COUNSELING TECHNIQUES FOR TEACHERS. A study of the tools and techniques involved in counseling and guidance. Special emphasis will be placed upon understanding of the psychological principles involved in promoting the personal, educational, vocational and social growth of young people. The student-centered approach will be emphasized. Reports and papers will be required. Mr. McIntire. Prereq.: Permission of the instructor. 3 cr. (*Offered only as an Extension course.*)

89, (89). MENTAL HYGIENE FOR TEACHERS. A study of the fundamental needs of human beings, with special emphasis on the mental and emotional conflicts of secondary-school students arising from the thwarting of these needs. Ways of recognizing these conflicts by their manifestations, and of helping students to resolve them, will be treated extensively in the course. Attention will also be given to the mental hazards of the teaching profession. Mr. Dowd. Prereq.: Psych. 1 or equivalent. 3 cr. *Not open to students who have completed Psych. 47.*

95. ADVANCED GENERAL PSYCHOLOGY. A systematic study of current psychology to help the student, by lectures, demonstrations, and reports, to obtain a broad, integrated view of the subject as both science and art. Mr. Haslerud. Prereq.: 12 semester credits in psychology. 3 rec.; 3 cr. (*Required of all undergraduate majors in Psychology.*)

98. SEMINAR IN PSYCHOLOGY. An extensive term paper on subjects chosen by the individual student. This project in library research meets the department's requirement for a comprehensive paper. Mr. Carroll. Prereq.: 15 semester credits in Psychology. 3 cr. (*Required of all undergraduate majors in Psychology*).

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

PUBLIC SPEAKING

(*See English*)

RADIO

(*See English*)

RELIGION

(*See Philosophy*)

RESERVE OFFICERS TRAINING CORPS*

Department of Military Science and Tactics

Lt. Colonel Troy A. Barker, Arty., *Professor;* Major William E. Manning, Inf., *Assistant Professor;* Capt. Frederick E. Charron, Inf., *Instructor;* Capt. Louis G. Broad, Jr., Inf., *Instructor;* Capt. James B. Harrington, Arty., *Instructor;* M/Sgt. Jacob Frick, Inf., *Assistant;* M/Sgt. Verne W. Goodwin, Inf., *Assistant;* M/Sgt. Paul R. Houck, Arty., *Assistant;* M/Sgt. Charles S. Imbernino, *Assistant;* M/Sgt. Clarence C. Pelkey, Arty., *Assistant*

The Army is now offering its ROTC students a "General Military Science" curriculum which will give the student more latitude in selecting his branch of service.

Students enrolled in Army ROTC pursue M.S. 11-12 during the Freshman year, M.S. 21-22 during the Sophomore year, M.S. 31-32 during the Junior year, and M.S. 41-42 during the Senior year. In order to qualify for M.S. 31, a student at the time of selection must have a minimum grade point average of 1.8.

M.S. 11-12. (First Year Basic) American military history; organization of the Army and ROTC; individual weapons and marksmanship; School of the Soldier. Minimum of three hours of formal instruction per week. 1½ cr.

M.S. 21-22. (Second Year Basic) Crew-served weapons and gunnery; map and aerial photograph reading; School of the Soldier. Minimum of three hours of formal instruction per week. 1½ cr.

M.S. 31-32. (First Year Advanced) Leadership; organization, functions and missions of the arms and services; small-unit tactics and communication; marksmanship; military teaching methods; exercise of command. Branch of service in which commissioned to be based on choice within quotas, and academic and military background. Minimum of 5 hours of formal instruction per week. 3 cr.

M.S. 41-42. (Second Year Advanced) Supply and evacuation; troop movements; motor transportation; command and staff; estimate of the situation and combat orders; military intelligence; military team; training management; military administration and justice; leadership; role of the United States in world affairs and the present world situation; officer indoctrination; exercise of command. Minimum of 5 hours of formal instruction per week. 3 cr.

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*A description of the ROTC program will be found on pages 14 and 52 of the *General Information 1954-1955* bulletin. It should be emphasized that once a student is enrolled in Advanced ROTC he must complete the course as a prerequisite for graduation. A student failing to complete satisfactorily the advanced program may be required to reimburse the U. S. Government for all allowances paid him under contract.

Department of Air Science and Tactics

Major Eugene J. Kelly, USAF, *Professor;* Major Frank E. Kirby, USAF, *Assistant Professor;* Major Kenneth H. Potter, USAF, *Assistant Professor;* Major Lawrence B. Reed, USAF, *Assistant Professor;* Capt. Richard S. Bushong, USAF, *Instructor;* Capt. Winston R. Dole, USAF, *Instructor;* Capt. Fennard L. Herring, Jr., USAF, *Instructor;* Capt. John M. Monson, USAF, *Instructor;* M/Sgt. Elwin W. Bishop, USAF, *Assistant;* M/Sgt. Wilbur B. Burchstead, USAF, *Assistant;* M/Sgt. James M. Hutton, USAF, *Assistant;* T/Sgt. Donald C. Erbe, USAF, *Assistant;* T/Sgt. Philip A. Shaneen, USAF, *Assistant;* S/Sgt. Matteo L. Tedesco, USAF, *Assistant*

Students enrolled in Air Force ROTC pursue A.S. 15-16 during the Freshman year, A.S. 25-26 during the Sophomore year, A.S. 35-36 during the Junior year, and A.S. 45-46 during the Senior year.

To be eligible for selection into the Advanced phase of Air Force ROTC, the student must have a minimum grade point average of 1.80 and an Air Science grade average of C or better at the time of selection. Furthermore, the applicant must successfully complete such general survey or screening tests as may be prescribed. Under the present selection criteria very few students will be admitted into Advanced Air Force ROTC who are not physically qualified for, and do not desire, flight training.

A.S. 15-16. (First Year Basic) This course presents an introduction to Air Force ROTC, the Air Force and its equipment and global mission, including introduction to aviation; fundamentals of global geography; international tensions and security organization; instruments of national military security; military courtesy; element and mass drill; and other leadership exercises. Minimum of 3 hours of formal instruction. 1½ cr.

A.S. 25-26. (Second Year Basic) More technical than the first year basic course, this course considers the elements of aerial warfare, covering such topics as historical background, targets, weapons, aircraft, the air ocean and strategic concept, bases, and forces; careers in the USAF; leadership laboratory; cadet non-commissioned officers training. Minimum of 3 hours of formal instruction. 1½ cr.

A.S. 35-36. (First Year Advanced) A course designed to provide some of the fundamentals essential to optimum effectiveness of Air Force officers. The first semester is devoted to the responsibilities and functions of commanders and the principles of effective staff work; logic and problem-solving techniques, including group dynamics and conference procedure; semantics, expression, and the elements of the communications process; and basic principles of military law and the organization, operation, and reporting of courts and boards. The second semester is more technical and deals with Applied Air Science, to include aerodynamics, aircraft engineering, navigation, and weather; Air Force base functions; leadership laboratory; leadership training as provided by command and staff positions within the cadet wing prepare the student for the summer camp program which normally follows immediately after A.S. 36. Minimum of 5 hours of formal instruction. 3 cr.

A.S. 45-46. (Second Year Advanced) This course is designed to prepare cadets for duties upon their entrance into the Air Force as junior- or squadron-level officers. Principles of leadership and management (seminar); career guidance; military aspects of world political geography; military aviation and the art of war; briefing for commissioned service. Second year advanced students gain wide experience in leadership through planning and supervising drill, instructing subordinates, and performing command and staff functions. Minimum of 5 hours of formal instruction. 3 cr.

SOCIAL SCIENCE

The course listed is given under the auspices of the Division of Social Science of the Faculty of the College of Liberal Arts. This Division includes the Department of Economics and Business Administration, Government, History, Hotel Administration, Psychology, Sociology, and the Department of Home Economics in the College of Agriculture.

81, (81). Internships. Actual field work in a department of the state or local government or in a selected and approved private agency. The work will be in charge of the department or agency to which the student is appointed. Arrangements for each student will be in charge of the Chairman of the Department involved or his representative. Prereq.: Internships for seniors only may be approved by the department of Government, Economics and Business Administration, History, Psychology, or Sociology. Not more than 16 credits. *No more than 9 credits may be counted toward the completion of major requirements.*

SOCIAL SERVICE

(*See Social Service Curriculum*)

SOCIOLOGY

Raymond E. Bassett, *Professor;* Charles W. Coulter, *Professor Emeritus;* Herbert J. Moss, *Associate Professor;* A. Melville Nielson, *Assistant Professor;* Owen B. Durgin, *Instructor;* Arthur E. Prell, *Instructor*

Except when a major or a prescribed curriculum requires it, Juniors and Seniors will not be admitted to Sociology 1 or 4. Experience has shown that these upperclassmen wishing to elect one or more courses in Sociology do well to take courses numbered from 33 to 72, inclusive, which are of a more specialized interest yet do not place a non-major at a disadvantage.

1. Principles of Sociology. An introductory survey course presenting Sociology as the most recent major discipline to adopt the method of natural science. Numerous field studies are described which have provided data on which current knowledge of human group relationships is based. Several problems making use of demographic and sociometric data are assigned. Group, community, culture, and social institutions are central topics of the course. Mr. Nielson, Mr. Prell, and Mr. Durgin. 3 lec. or rec.; 3 cr. For Freshmen and Sophomores. (*May not be counted for major credit.*)

4. Problems of Social Disorganization. The social factors involved in alcoholism, broken families, law breaking, poverty, vagrancy, etc., and in maladjustment to bodily defect, chronic illness, or old age. The relation of personal, institutional, and community disorganization to social and individual pathologies. The extent of each type of problem in the U. S. Attempts to isolate causes. Current treatments and their effectiveness. Mr. Bassett, Mr. Prell, and Mr. Durgin. 3 lec. or rec.; 3 cr. For Freshmen and Sophomores. (*May not be counted for major credit.*)

33. CULTURAL ANTHROPOLOGY AND ETHNOLOGY. (1) A comparative study of primitive folk-ways, institutions, and social organization, marriage, economic activities, religion, property inheritance, and folklore; culture and the principles of its development; the significance of primitive culture for an understanding of contemporary civilization. (2) A comparative study of peoples; environmental factors, societal effect of invasion; colonization, and linguistic fusions. Mr. Prell. 3 lec. or rec.; 3 cr. (*Not open to Freshmen.*)

34. MINORITY GROUP RELATIONS. The nature and the results of the intergroup relations of minority and majority groups. Special emphasis is given to the Negro and other minority groups in the United States. Problems of the isolation and assimilation of minority groups; minority group reactions to their minority status; majority group techniques to maintain their dominant position; prejudice and discrimination; effects of legislation and education in resolving the issues. Mr. Nielson. 3 lec. or rec.; 3 cr. (*Not open to Freshmen.*)

39. RURAL SOCIOLOGY. The rural community, its extent, location and typical ecological pattern as adaptation to local conditions. The rural population, origin, characteristics, mobility, and relation to the land. Function of formal and informal organizations as cohesive forces within the community. Mr. Durgin. 3 lec. or rec.; 3 cr. (*Not open to Freshmen.*)

43. URBAN SOCIOLOGY. Developmental factors producing cities, with emphasis on rise of the modern city. Forces bringing about commercial, industrial, and residential areas within the city. The urban population, origin, characteristics, and mobility. Social institutions studied as adaptation to urban life. Function of various media of communication as cohesive forces within the city. Mr. Durgin. 3 lec. or rec.; 3 cr. (*Not open to Freshmen.*)

44. SOCIAL PSYCHOLOGY. The effects of group situations on recall, perception, attitudes, and various overt behaviors. Factors in morale; hypotheses of conforming behavior; reactions to social frustration; factors in prejudice; effects of mass communication; stereotypes; propaganda; measurement of public opinion; critical social situations. Mr. Durgin. Prereq.: Soc. 1 or Psych. 1. 3 lec. or rec.; 3 cr. (*Not open to Freshman.*)

52. POPULATION ANALYSIS. A seminar course in demography using as its principal materials data from the U. S. Census of Population and U. S. Vital Statistics. Growth and levelling of city and state populations; distribution of such factors as age, sex, marital status, and years of schooling, differential birth and death rates; real and apparent changes in causes of death; international and interstate migration, and theories advanced to explain geographical mobility. Training in statistics not required. Mr. Bassett. 3 lec. or rec.; 3 cr. (Not offered in 1954-1955.)

54. PATTERNS OF CULTURE GROWTH. The general purpose of this course is to present authentic anthropological materials from selected primitive cultures, as well as from contemporary U. S. culture, which bear on the development of social forms and social movements. Cross-cultural comparisons will be made of patterns of humor, law, kinship, science, etc., and their growth. The development of social movements in different cultures. Mr. Prell. Prereq.: Soc. 33, or Soc. 1 with permission of instructor. 3 lec. or rec.; 3 cr.

71. CRIME IN AMERICAN SOCIETY. Development of concepts concerning who is the criminal. A survey of theories to explain crime. Analysis of the amount and distribution of crime. A discussion of the origins and definitions of criminal law and its influence on public attitudes. The police, courts, prisons,

probation, and other social treatment of criminals. A survey of modern American movements to reform the law and prisons. The application of scientific findings to the prevention of crime. Mr. Prell. 3 lec. or rec.; 3 cr.

72. MARRIAGE AND THE FAMILY. The development of the family, with special emphasis given to changes leading to the modern American family. Courtship, marital, parent-child, and other relationships in the family setting are considered. Attention is given to divorce, desertion, child welfare, and other family problems. Proposals for the reorganization of the contemporary family are examined. Mr. Nielson. 3 lec. or rec.; 3 cr.

73, 74. AN INTRODUCTION TO SOCIAL WORK. An introductory course to acquaint the student with the field of social work. During the first semester, the emphasis is upon the philosophy and history of social work; endowments and special foundations; public welfare on the federal, state, and local levels; and children and family services. During the second semester, attention is given to social case work in various social agency settings; social group work; community organization for social welfare; and social work as a profession. Mr. Nielson. Open to Department of Sociology majors; others may be admitted by permission of the instructor. 3 lec. or rec.; 3 cr. (Not open to students who have taken Soc. 73 or Soc. 84 prior to 1953-1954.)

75. METHODS OF SOCIAL RESEARCH. Analysis of research problems. Designing field studies and experiments. Practice in sampling, schedule construction, and interviewing techniques. Emphasis is on methods of obtaining data rather than on statistical analysis. Mr. Bassett. 3 lec. or rec.; 3 cr.

89-90. DEVELOPMENT OF SOCIOLOGICAL THOUGHT. The history of the development of sociology from Plato to the present day. During the first semester, the emphasis is on the nineteenth century, with special reference to the writings of Comte, Spencer, and the European systems of thought. During the second semester, analysis is made of twentieth century sociological thought with special reference to American sociology. Mr. Prell. For Seniors with permission of instructor. 3 lec. or rec.; 3 cr. (Soc. 89 will not be available in 1954-1955 but Soc. 90 will be offered in the second semester.)

92. SENIOR SEMINAR. A synthesis of materials encountered by Seniors in various specialized sociology courses chosen for their major. How contributions of demographers, social psychologists, anthropologists, and social philosophers complement each other. How basic generalized discoveries and techniques are developed, modified, and applied in different specific fields. Classics in the literature of Sociology. The comprehensive examination required of majors in Sociology will be taken by members of the seminar during May. Mr. Bassett. *Required of Seniors majoring in Sociology.* Open to other students who will have completed 24 semester hours of credit in advanced Sociology courses by the end of their Senior Year. 3 lec. or rec.; 3 cr.

93. MASS COMMUNICATION. Emphasis is on description of how press, radio, and screen perform essential functions in our society. Content of their messages, characteristics of their audiences, and probable impact are analyzed, using current periodicals, films, and broadcasts as material. The importance of word-of-mouth communication as pattern and sounding board for mass communication is examined. Mr. Bassett. Prereq.: Permission of the instructor. 3 lec. or rec.; 3 cr.

95, 96. SOCIAL RESEARCH SEMINAR. A laboratory or field work course in which actual research, requested by a sponsor, is planned and carried out.

Analysis of problems, choice of appropriate research methods, construction of instruments, coding, tabulation, quantitative analysis of data, and presentation of results are carried out by the seminar, organized as a research agency. Mr. Bassett. Prereq.: Soc. 75. 3 lab.; 3 cr.

97. SOCIAL SERVICE FIELD WORK. Designed to give to the student an understanding of social work through observation and participation. Students will work in accredited social-work agencies or institutions for a total of eight weeks (if done during the period prior to the semester that the classroom work for Soc. 97 is taken), or in exceptional cases for a total of 200 hours (if done in connection with a nearby social agency during the college year that the classroom work for Soc. 97 is taken). It is strongly recommended that students who can qualify should acquire this field-work experience in the summer following the Junior year. The weekly seminar will be devoted to reports and discussions of the field work experiences; special projects concerned with social work; and field trips to social work agencies. Mr. Nielson. Prereq.: Soc. 73, 74 and permission of the instructor. 6 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

ZOOLOGY

GEORGE M. MOORE, *Professor;* C. FLOYD JACKSON, *Professor Emeritus;* LORUS J. MILNE, *Professor;* EDYTHE T. RICHARDSON, *Associate Professor;* EMERY F. SWAN, *Associate Professor;* WILBUR L. BULLOCK, *Associate Professor;* M. JEAN ALLEN, *Assistant Professor;* PHILIP J. SAWYER, *Assistant Professor;* MARIAN H. PETTIBONE, *Assistant Professor;* PAUL A. HOLLE, *Instructor;* DOROTHY M. TRAVIS, *Instructor*

7. GENERAL ZOOLOGY. Basic course for Zoology majors and pre-medical students. Systematic survey of the animal kingdom including consideration of the natural history and functional relationships. Accompanied by dissection in the laboratory of selected types. Mr. Swan. Prereq.: Biol. 2, or Zool. 48. 2 lec. or rec.; 2 lab.; 4 cr.

8. COMPARATIVE ANATOMY. Fundamental principles of comparative vertebrate anatomy. Selected vertebrate types dissected in the laboratory. Miss Allen. Prereq.: Zool. 7. 2 lec. or rec.; 2 lab.; 4 cr.

17. HUMAN ANATOMY. A study of the structure of the human body including gross and microscopical anatomy of the various systems. Collateral reading, written reports, and conferences. Mrs. Richardson. Prereq.: Biol. 2. 3 lec.; 1 lab.; 4 cr. (Not open to those who have credit for Zool. 8.)

18. HUMAN PHYSIOLOGY. A study of the principles involved in the functioning and integration of the various systems of the body. Collateral reading, written reports, conferences. Mrs. Richardson. Prereq.: Zool. 17 or Zool. 8. 3 lec.; 3 cr. (Not open to those who have credit for Zool. 20.)

19. KINESIOLOGY. A study of bodily movements. Special emphasis is given to the relation of skeleton, muscles, and joints in movement. Designed primarily for Occupational Therapy students and for students in the Physical Education Teacher Preparation curriculum. Mrs. Adkins. Prereq.: Zool. 17 and 18. 3 lec. or rec.; 3 cr.; with optional laboratory, 4 cr.

20. Human Physiology. A study of the principles involved in the functioning and integration of the various systems of the body; laboratory work; collateral reading; written reports; conferences. Mrs. Richardson. Prereq.: Zool. 17 or Zool. 8. 3 lec.; 1 lab.; 4 cr. (Not open to those who have credit for Zool. 18.)

36. Ornithology. A study of birds, their identification, migration, life history, and economic importance with special reference to those of eastern North America. Designed for students interested in wildlife conservation, for secondary-school teachers, and for others interested in bird study as a hobby. Mr. Sawyer. Prereq.: Biol. 2 or equivalent. 1 lec.; 2 lab. or field trips; 3 cr.

(Expenses for field trips will be borne by students. Six- or seven-power prism binoculars are necessary field equipment. If the student does not have his own, he may rent binoculars from the University Bookstore at a cost not to exceed $10.00 for the session.)

48. Principles of Zoology. The principles of animal biology, including embryology, physiology, and genetics, with emphasis on man and other vertebrates. A study of the relationship between living things and their environment. Mr. Holle. *Required of Freshmen in Agriculture.* 2 lec.; 1 lab.: 3 cr. *This course cannot be used to satisfy major requirements.* (Not open to those who have credit for Biol. 1-2).

Advanced Courses in Zoology

All the following courses require Junior or Senior standing.

51. Parasitology. An introductory course concerned with some of the more important parasites causing diseases of man and animals. Living materials will be used as far as possible. Mr. Bullock. Prereq.: Biol. 2 and a year of Zoology. 2 lec.; 2 lab.; 4 cr.

55. Marine Invertebrate Zoology. A survey of the major invertebrate groups with emphasis on the inshore marine fauna. About one fourth of the laboratory time will be devoted to field work with emphasis on natural history and ecological relationships. Mr. Moore and staff. Prereq.: General Zoology. 3 rec.; 3 lab.; 6 cr. *(Offered in Summer only.)*

56. Freshwater and Terrestrial Invertebrates. The natural history and taxonomy of the invertebrates of land and freshwater, exclusive of insects, with special reference to those of Eastern North America. Mr. Moore. Prereq.: General Zoology. 1 rec.; 2 lab.; 3 cr. *Open to students who have credit for Zoology 56 prior to January, 1952.*

59. General Physiology. The chemical and physical nature of the living substance. The processes of metabolism, movement of materials, irritability, response. Lectures, assigned topics, and laboratory experiments. Miss Travis. Prereq.: Biol. 2, one year of Zoology, a year of college Physics, and a course in Organic Chemistry. 3 lec. or rec.; 1 lab.; 4 cr.

60. Comparative Physiology. A course designed to study in a comparative manner the functional systems found throughout the animal kingdom. Major study will be placed on the functional or ecological adaptations of the organisms to its environment. Miss Travis. Prereq.: Zool. 7; 18 or 59, and a course in Organic Chemistry. 3 lec. or rec.; 2 lab.; 5 cr.

61. Genetics. A study of the physical basis of inheritance, expression, and interaction of the hereditary units, linkage, and variation. The application of Mendelian principles to plant and animal breeding. Mrs. Richardson. Prereq.: Biol. 2, or Bot. 1 and Zool. 48. 3 lec. or rec.; 3 cr.

64. Neurology. Practical study of morphology, physiology, and histology of the human nervous system. Mrs. Richardson. Prereq.: Biol. 2 and one year of Zoology. 3 lec. or rec.; 1 lab.; 4 cr.

65. Embryology. A study of the fundamental principles of development. The developmental process from the egg to the formation of the body and the establishment of the principal organs and systems. Miss Allen. Prereq.: Zool. 8. 2 lec.; 2 lab.; 4 cr.

66. Elements of Histology and Microtechnique. A study of the microscopic anatomy of principal tissues and organs of vertebrates with an introduction to general histological technique. Mr. Bullock. Prereq.: Zool. 8 or 17. 2 lec.; 2 lab.; 4 cr.

77. Natural History and Taxonomy of the Vertebrates. A study of vertebrate animals exclusive of birds; their habits, habitats, life histories, with special reference to those occurring in Eastern North America. Techniques of collection, identification, and preservation are included. Mr. Sawyer. Prereq.: General Zoology. 3 rec.; 2 lab.; 5 cr.

87, 88. Zoology Seminar. Seminar discussions on current Zoological literature conducted each week. Primarily for Seniors majoring in Zoology and for Graduate Students. May be elected by permission of the Chairman of the Department. Mr. Moore and staff. 1½ hours per week; 1 cr.

94. Animal Ecology. A study of the problems of animal ecology concerned with both the individual and the community. The special ecological problems in the marine, freshwater, and terrestrial environments will be considered. Mr. Swan and Mr. Sawyer. Prereq.: Zool. 55, 56 or 77, and Plant Ecology. 3 rec.; 2 lab.; 5 cr.

97, 98. Special Problems. Advanced students may elect a special problem provided they present a detailed outline of the subject and can furnish adequate proof of their ability to carry it out with equipment available. Mr. Moore and staff. Prereq.: Permission of the Chairman of the Department. 1-4 cr.

FOR COURSES PRIMARILY FOR GRADUATE STUDENTS SEE CATALOGUE OF THE GRADUATE SCHOOL

Summary of Registration

	AGRICULTURE				LIBERAL ARTS				TECHNOLOGY				MISCELLANEOUS				TOTAL											
																	MEN				WOMEN				BOTH			
	1952-53	1951-52	1950-51	1949-50	1952-53	1951-52	1950-51	1949-50	1952-53	1951-52	1950-51	1949-50	1952-53	1951-52	1950-51	1949-50	1952-53	1951-52	1950-51	1949-50	1952-53	1951-52	1950-51	1949-50	1952-53	1951-52	1950-51	1949-50
Senior	67	73	75	84	450	429	438	594	88	102	121	176	......	......	......	......	429	439	487	697	176	165	147	157	605	604	634	854
Junior	69	74	77	78	473	504	463	499	81	92	119	139	......	......	......	......	425	456	493	542	198	214	166	174	623	670	659	716
Sophomore	62	76	90	97	461	566	587	568	113	92	124	98	......	......	......	......	425	478	551	541	211	256	250	222	636	734	801	763
Freshman	94	102	105	142	614	609	691	683	213	148	141	216	......	......	......	......	615	574	654	737	306	285	283	304	921	859	937	1041
Special	19	18	18	12	60	65	99	141	6	2	9	8	......	......	......	......	36	36	75	85	49	49	51	76	85	85	126	161
Graduates	......	......	......	......	......	......	......	......	......	......	......	......	190	257	269	251	162	221	243	219	28	36	26	32	190	257	269	251
Total—regular curriculums	311	343	365	413	2058	2173	2278	2485	501	436	514	637	190	257	269	251	2092	2204	2503	2821	968	1005	923	965	3060	3209	3426	3786
Non-degree curriculums																												
2nd yr.	48	35	63	55	......	......	......	......	......	......	......	......	......	......	......	......	46	35	61	54	2	......	2	1	48	35	63	55
1st yr.	33	64	56	77	......	......	......	......	......	......	......	......	......	......	......	......	30	61	54	76	3	3	2	1	33	64	56	77
Total	81	99	119	132	......	......	......	......	......	......	......	......	......	......	......	......	76	96	115	130	5	3	4	2	81	99	119	132
Summer School	......	......	......	......	......	......	......	......	......	......	......	......	753	1022	1074	1184	408	608	665	770	345	414	409	414	753	1022	1074	1184
Extension School	......	......	......	......	......	......	......	......	......	......	......	......	1031	849	635	494	710	636	445	275	321	213	190	219	1031	849	635	494
General Electric	......	......	......	......	......	......	......	......	......	......	......	......	40	30	......	......	40	30	......	......	......	......	......	......	40	30	......	......
Summer Music School	......	......	......	......	......	......	......	......	......	......	......	......	38	50	......	......	26	37	......	......	12	13	......	......	38	50	......	......
Total—short curriculums	81	99	119	132	......	......	......	......	......	......	......	......	1862	1951	1709	1678	1260	1407	1225	1175	683	643	603	635	1943	2050	1828	1810
Grand Total	392	442	484	545	2058	2173	2278	2485	501	436	514	637	2052	2208	1978	1929	3352	3611	3728	3996	1651	1648	1526	1600	5003	5259	5254	5596
Less Duplicates	......	......	......	......	......	......	......	......	......	......	......	......	187	455	284	422	146	249	267	354	41	206	17	68	187	455	284	422
NET GROSS TOTAL	392	442	484	545	2058	2173	2278	2485	501	436	514	637	1865	1753	1694	1507	3206	3362	3461	3642	1610	1442	1509	1532	4816	4804	4970	5174

The curriculums included in the three colleges are: **AGRICULTURE: Agricultural** Chemistry, Agricultural Economics, Agricultural Engineering, Agronomy, Animal Husbandry, Dairy Husbandry, Entomology, Forestry, General, Home Economics, Horticulture, Mechanized Agriculture, Poultry Husbandry, Pre-Veterinary, and Teacher Preparation; LIBERAL ARTS: Arts Education, Business, Chemistry, General, General Home Economics, Hotel Administration, Medical Technology, Music Education, Nursing, Occupational Therapy, Physical Education, Secretarial, Social Service, Teacher Preparation, Pre-Medical, Zoology; TECHNOLOGY: Building Construction. Chemistry, Chemical Engineering, Civil Engineering, Electrical Engineering, Mathematics, Mechanical Engineering, and Physics.

Time and Room Schedule 1954-55

Key to Symbols

Lower case section letters indicate lectures or recitations; capital letters indicate laboratories. In single-section courses, "R" indicates recitation or lecture; "L" indicates laboratory. Courses or sections marked * are offered first semester only; those marked † are offered second semester only. A ‡ before a course number indicates permission of the instructor is required for registration. For any changes or corrections which may occur after this schedule has been printed, see lists in the offices of the College Deans or on the Thompson Hall bulletin board.

Final Examination Schedule 1954-55

Each course is assigned to one of twenty-two examination groups, shown by Roman numerals in the Time and Room Schedule in the column headed "Exam." No student is to register for more than one course in the same examination group. The group for each course is to be shown on the registration card. Where the group number is 0, the course has no final examination.

Courses with a single section ordinarily are assigned to an examination group which is reserved for classes meeting at the same time. These groups are: classes meeting Monday, Wednesday, Friday at 8 a.m., Group I; Monday, Wednesday, Friday at 9 a.m., Group V; Monday, Wednesday, Friday at 10 a.m., Group IX; Monday, Wednesday, Friday at 11 a.m., Group XIII; Monday, Wednesday, Friday at 12 noon, Group VI; Monday, Wednesday, Friday at 1 p.m., Group XX; Monday, Wednesday, Friday at 2 p.m., Group XXI; Tuesday, Thursday, Saturday at 8 a.m., Group XIX; Tuesday, Thursday, Saturday at 9 a.m., Group XV; Tuesday, Thursday, Saturday at 10 a.m., Group XI; Tuesday, Thursday, Saturday at 11 a.m., Group VII; Tuesday, Thursday p.m., Group III.

The final examination schedule follows:

Semester I	8-11 A.M.	1-4 P.M.	Semester II	8-11 A.M.	1-4 P.M.
Mon., Jan. 17	XII	XIII	Mon., May 23	XIII	VI
Tues., Jan. 18	VI	XIV	Tues., May 24	XIV	XVI
Wed., Jan. 19	XVI	XVII	Wed., May 25	XVII	XVIII
Thurs., Jan. 20	XVIII	XV	Thurs., May 26	XV	XIX
Fri., Jan. 21	XIX	XX	Fri., May 27	XX	XXII
Sat., Jan. 22	XXII	XXI	Sat., May 28	XXI	I
Mon., Jan. 24	I	X	Mon., May 30	X	II
Tues., Jan. 25	II	IV	Tues., May 31	IV	III
Wed., Jan. 26	III	VIII	Wed., June 1	VIII	V
Thurs., Jan. 27	V	VII	Thurs., June 2	VII	IX
Fri., Jan. 28	IX	XI	Fri., June 3	XI	XII

TIME AND ROOM SCHEDULE 1954-55

Agriculture (Agr)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1	O	1	R	*F 9	Pe 102
3	IX	2	R	*MW 10	Mo 201
4	O	2-6		†Arr	Arr

Agricultural Chemistry (Ag Chem)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1	I	5	R	*MWF 8	Ja 301
			A	*MW 2-4:30	Ja 104
			B	*TTh 10-12:30	Ja 104
			C	*TF 2-4:30	Ja 104
2	I	3	R	†MW 8	Ja 205
			L	†M 2-4:30	Ja 104
4	XIX	3	R	†TTh 8	Ja 102
			L	†T 2-4:30	Ja 104
6	I	3	R	†MW 8	Ja 102
			L	†W 2-4:30	Ja 104
51-52	XIII	5	R	MWF 11	Ja 102
			A	MW 1-3	Ja 103
			B	MW 3:30-5:30	Ja 103
53-54	O	4		Arr	Arr
56	V	5	R	†MWF 9	Ja 102
			L	†TTh 2-4:30	Ja 103
101, 102	O	2-4	R	†MWF 10	Ja 102

Agricultural Economics (Ag Econ)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
12	XIII	3	R	†MWF 11	Mo 105
14	V	4	R	†MWF 9	Mo 3
			L	†M 3-5	Mo 207
34	IX	3	R	†MWF 10	Mo 103
51	IX	3	R	*MWF 10	Mo 207
55	V	3	R	*MWF 9	Mo 207
60	V	3	R	†MWF 9	Mo 201
67,68	O	1-3		Arr	Arr

Agricultural Education (Ag-Ed)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
89-90	O	1		Arr	Arr
91-92	I	3	R	MW 8	Pu 18
			L	W 1-3	Pu 18
93	O	13		*Arr	Arr

Agricultural Engineering (Ag Eng)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
2	VII	3	R	†TTh 11	Pe 7
			L	†F 3-5	Pe 7
15	O	1	L	*M 3-5	Pu 7
17, 18	O	2	L	MF 3-5	Pu 7
21	XV	2	R	*T 9	Pe 7
			L	*M 1-4	Pe 7
22	XV	2	R	†Th 9	Pe 7
			L	†F 1-3	Pe 7

Agricultural Engineering (Continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
23	XV	2	R	*Th 9	Pe 7
			L	*F 1-3	Pe 1
24	XV	2	R	†T 9	Pe 7
			L	†M 1-3	Pe 7
33	XI	3	R	*TTh 10	Pe 7
			L	*T 2-4	Pe 7
(35)	XI	3	R	†TTh 10	Pe 7
			L	†T 2-4	Pe 7
(40), 40	O	0	L	T 1	Pe 7

Agronomy (Agron)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
11	V	4	R	*MWF 9	Ne 205
			A	*M 3-5	Ne 203
			B	*T 3-5	Ne 203
			C	*W 3-5	Ne 203
14	V	3	R	†MWF 9	Ne 205
21	XIII	3	R	*MWF 11	Ne 205
24	XIII	3	R	†MW 11	Ne 205
			L	†T 3-5	Ne 205
25	O	1	L	*Arr	Ne 208
28	XI	3	R	†TTh 10	Ne 205
			L	†F 1-3	Ne 205
51	XV	3	R	*TTh 9	Ne 205
			L	*W 1-5	Ne 205
59	I	3	R	*MW 8	Ne 205
			L	*M 1-4	Ne 321
60	I	3	R	†MW 8	Ne 204
			L	†M 1-4	Ne 205
62	XIX	3	R	†TTh 8	Ne 205
			L	†W 1-3	Ne 205
71, 72	O	1-3		Arr	Arr

Animal Husbandry (A H)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
2	XIX	3	R	†TTh 8	Ne 116
			L	†W 1-3	Pu Pav
11	III	1	L	*T 2-4:30	Ne 116 & Pu Pav
13	XIII	3	R	*MWF 11	Ne 116
14		1	L	†Arr	Ne 116 & Pu Pav
15, 16	1	3	R	MWF 8	Ne 116
18	V	2	R	†F 9	Ne 116
			A	†M 1-3	Ne 116
			B	†M 3-5	Ne 116
19, 20		3		Arr	Arr
21	VII	2	R	*Th 11	Ne 116
			L	*F 1-3	Pu
51	V	3	R	*MWF 9	Ne 116
52	O	1-3		†Arr	Arr

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
Applied Farming—See special schedule					
Arts					
‡3, 4	O	2	L	TTh 2-4	He 210
‡5, (5)	O	2	A	TTh 10-12	He 211
			B	*MF 10-12	He 211
‡6	O	2	L	†MW 2-4	He 209
‡(8)	O	2	L	*MW 2-4	He 210
‡(11)	O	2	L	†Arr	He 224
‡16	O	2	L	†Arr	He 224
‡18	O	2	L	†Arr	He 224
20	O	2	L	†TTh 8-10	Kn 306
‡23, 24	O	2	A	MF 10-12	He 222
			B	TTh 10-12	He 222
			C	TTh 2-4	He 222
			D	TTh 8-10	He 222
‡(23)	O	2	L	†MF 10-12	He 107
‡25, 26	O	2-3	L	MWF 2-4	He 215
‡27, 28	O	2-3	L	TWTh 2-4	He 107
31, 32	II	3	a	MWF 10	He 208
			b	MWF 11	He 208
35, (35)	O	2	L	M 7 p.m.	N H
‡39, (39)	XX	3	R	M 1	He 213
			A	T 2-6	He 223
			B	W 2-6	He 223
85	V	3		*MWF 9	He 213
88	V	3		†MWF 9	He 213
Art Education (Art-Ed)					
‡91, (92)	O	3		*Arr.	He 213
Bacteriology (Bact)					
1	XV	4	R	*TTh 9	Ne 220
			A	*MW 2-4	Ne 214
			B	*TTh 10-12	Ne 214
2	I	4	R	‡MW 8	Ne 205
			A	†MW 10-12	Ne 214
			B	†TTh 2-4	Ne 214
5	V	3	R	*MWF 9	Ne 220
8	XV	4	R	†TTh 9	Ne 220
			A	†MW 2-4	Ne 224
			B	†TTh 10-12	Ne 224
53	XV	4	R	*TTh 9	Ne 116
			A	*MW 10-12	Ne 224
			B	*TTh 2-4	Ne 224
54	IX	4	R	†MW 10	Ne 205
			L	†W1-5	Ne 214
55, 56	O	Arr		Arr	Ne 223
57, 58	O	1		Th 4-6	Ne 220
101	V	4	R	*MW 9	Ne 319
			L	*T 2-6	Ne 214

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
Bacteriology (continued)					
104	O	3		†Arr	Arr
108	XV	4		Scheduled with Bact. 8	
109, 110	O	1	R	F 10	Ne 205
153	XV	4		Scheduled with Bact. 53	
Biology (Biol)					
1-2	XVIII	4	s	TTh 9	Mk Aud
			t	TTh 10	Mk Aud
			a	M 8	Ne 113
			b	M 9	Ne 113
			c	M 10	Ne 113
			d	M 11	Ne 113
			e	M 12	Ne 113
			f	M 1	Ne 113
			g	M 2	Ne 113
			h	M 3	Ne 113
			i	T 8	Ne 113
			j	T 9	Ne 113
			k	T 10	Ne 113
			l	T 11	Ne 113
			m	T 12	Ne 113
			n	*T 2	Ne 113
			A	W 8-10	Ne 113
			B	F 8-10	Ne 113
			C	W 10-12	Ne 113
			D	F 10-12	Ne 113
			E	W 12-2	Ne 113
			F	F 12-2	Ne 113
			G	W 2-4	Ne 113
			H	F 2-4	Ne 113
			I	S 8-10	Ne 113
			J	Th 8-10	Ne 113
			K	Th 10-12	Ne 113
			L	S 10-12	Ne 113
			M	Th 12-2	Ne 113
			N	*Th 2-4	Ne 113

Register for lecture s or t.

Recitation and laboratory section must bear the same letter. Fill out one roll card only—indicating lecture section (s, or t) and laboratory section.

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
Biology Education (Biol-Ed)					
91	O	3		*Arr	Arr

Botany (Bot)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1	V	4	R	*MW 9	NH 3
			A	*MW 1-3	Ne 326
			B	*MW 3-5	Ne 326
			C	*TF 3-5	Ne 326
2	Arr	4	Arr	Arr	Arr
3	XIX	4	R	*TThS 8	Ne 205
			A	*T 2-4	Ne 319
			B	*W 3:30-5:30	Ne 319
6	X	3	R	†F 4	Ne 220
			A	†MW 1-3	Ne 326
			B	†TF 2-4	Ne 326
			C	†MW 3:30-5:30	Ne 326
42	XIII	3	R	†MW 11	Ne 116
			L	†T 2-4	Ne 319
51	XI	3	R	*T 10	Ne 205
			A	*WF 10-12	Ne 319
			B	*ThS 10-12	Ne 319
53	XX	3	R	*M 1	Ne 205
			L	*M 2-4; W 1-3	Ne 319
55	XV	4	R	*TTh 9	Ne 222
			L	*M 2-5	Ne 222
56	XIX	4	R	†TTh 8	Ne 319
			A	†MW 10-12	GH
			B	†MW 3-5	GH
57, 58	O	2-6		Arr	Arr
102	O	4		†Arr	Arr
104	O	3		†Arr	Arr
107, 108	O	2-6		Arr	Arr
112	O	3		†Arr	Arr

Building Construction (B-CE)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
11	XII	2		*MF 2	Kn 235
12	XII	2	R	†M 2	Kn 235
			L	†F 2-4	Kn 311 & 235
21	XX	3	R	*MF 1; W 10	Kn 235
22	XX	3	R	†MF 1	Kn 235
			L	†W 10-12	Kn 316 & 235
31, 32	V	3		MWF 9	Kn 235

Business Administration (BA)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	XVI	4	a	MF 8	Mo 9
			A	MW 2-4	Mo 9
(Note: Register for lec. and lab. bearing same letter.)			b	TTh 8	Mo 9
			B	TTh 10-12	Mo 9
			c	TTh 8	Mo 301
			C	TTh 10-12	Mo 301
			d	TTh 9	Mo 9
			D	MF 10-12	Mo 9
3-4	XVI	3	R	MW 8	Mo 301
			L	M 2-4	Mo 301
7-8	XV	3	R	TTh 9	Mo 301
			L	W 2-4	Mo 301
9-10	XX	3	R	MW 1	Mo 9
			L	F 2-4	Mo 9
21-22	XIV	3	a	MWF 8	Mo 211
			b	TThS 9	Mo 211
23, (23)	XVIII	3	R	MWF 12	Mo 105
24	XII	3	a	†MWF 10	Mo 211
			b	†TThS 10	Mo 105
34	X	3	a	†TThS 10	Mo 211
			b	†TThS 11	Mo 211
45	VIII	3	a	*MWF 10	Mo 211
			b	*MWF 11	Mo 211
46	XXI	3	R	†MWF 2	Mo 211
47	VII	3	R	*TThS 11	Mo 105
52	VII	3	R	†TThS 11	Mo 105
56	V	3	R	†MF 9	Mo 301
			L	†T 2-4	Mo 301
57	IX	3	R	*MF 10	Mo 301
			L	*F 2-4	Mo 301
68	XII	3	a	†MWF 10	Mo 211
			b	†TThS 8	Mo 211

Ceramics — See Arts 16, 18

Chemical Engineering (Ch E)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
12	XI	2	R	†TTh 10	Kn 135
41	XIX	5	R	*TThS 8	Kn 133
			L	*W 10-12, 2-5	Kn 126
71	VII	2		*TTh 11	Kn 133
72	XI	2		†TTh 10	Kn 133
74	XIX	3		†TThS 8	Kn 133
75, 76	V	3		MWF 9	Kn 133
77, 78	III	3		T 9-12; 1-5:30	Kn 122; Kn 255
79	XIII	3		*MWF 11	Kn 133
80	O	5		†Arr	Arr

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
Chemistry (Chem)					
1-2	IV	4	a	MWF 10	Ja 301
			b	TThS 9	Ja 205
			c	MWF 10	Ja 113
(Sec. c for Home Economics students only)					
			d	TThS 9	Ja 301
			A	T 10	Ja 303
			B	Th 10	Ja 303
			C	Th 2	Ja 303
3-4	IV	4	a	TThS 10	Ja 301
			b	MWF 9	Ja 301
			c	MWF 11	Ja 301
			d	TThS 8	Ja 301
			e	*MWF 9	Ja 113
(Sec. e for prospective Chem. 6 students)					
			AA	M 2	Ja 303
			BB	T 2	Ja 303
			CC	W 2	Ja 303
			DD	F 2	Ja 303
			EE	*F 10	Ja 303
			FF	*W 10	Ja 303
			(Sec. FF for prospective Chem. 6 students)		
6	IV	6	R	†MWF 9	Ja 113
			L	†MWF 10	Ja 303
17	IX	4	R	*MW 10	Ja 207
			A	*TTh 10	Ja 210
			B	*TF 2	Ja 210
21	XIII	4	R	*MW 11	Ja 207
			A	*MW 2	Ja 204
			B	*TF 2	Ja 204
22	XIII	5	R	†MW 11	Ja 207
			A	†M 2	Ja 210
				†T 10 & 2	Ja 210
			B	†Th 10	Ja 210
				†F 10 & 2	Ja 210
26	VII	4	R	†TTh 11	Ja 301
			A	†MF 10	Ja 204
			B	†TF 2	Ja 204
27	VII	4	R	*TTh 11	Ja 207
			L	*MW 2	Ja 210
31	XXII	3	R	*S 8	Ja 207
			L	*W 10 & 2	Ja 208
33	XIX	2	R	*TTh 8	Ja 207
45, (45)	IX	5	R	MWF 10	Ja 205
			L	MW 2	Ja 14
51-52	XIII	5	R	MWF 11	Ja 113
			L	T 10 & 2	Ja 14
53-54	I	5	R	MWF 8	Ja 113
			L	F 10 & 2	Ja 14

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
Chemistry (continued)					
55	XV	3	R	*TThS 9	Ja 207
56	XV	3	R	†T 9	Ja 207
			L	†T 10 & 2	Ja 18
4	XIX	62	R	†TTh 8	Ja 207
			L	†W 10 & 2	Ja 208
82	XI	4	R	†TThS 10	Ja 205
			L	†T 2	Ja 110
83-84	XV	5	R	TThS 9	Ja 113
			A	T 10 & 2	Ja 110
			B	M 10 & 2	Ja 110
85-86	V	3	R	MWF 9	Ja 207
87	O	1	R	*Th 11	Ja 113
88	O	1	a	†Th 10	Ja 113
			b	†Th 11	Ja 113
89-90	O	5		Arr	Arr
101-102	O	3	R	MWF 8	Ja 207
103-104	O	3	R	MWF 9	Ja 205
105-106	O	3	R	TThS 10	Ja 205
111, 112	O	3	R	TThS 8	Ja 113
115, 116	O	3	R	T 11	Ja 205
			L	Arr	Arr
131-132	O	3		Arr	Arr
141-142	O	1		Arr	Arr
151, 152	O	Arr		Arr	Arr
Civil Engineering (C E)					
2	XVIII	2	a	†F 1	Kn 231
Register for a			b	†Th 1	Kn 231
and A or b and B			A	†T 2-4:30	Kn 229
			B	†F 2-4:30	Kn 229
3	XIV	6	R	*MWF 8	Kn 231
			L	*MWF 2-4:30	Kn 311
4	XIV	3	R	†F 10	Kn 229
			L	†MW 10-12:30	Kn 311
6	XXI	3	R	†F 11	Kn 229
			L	†MW 2-4:30	Kn 313
7, (7)	XVI	3	R	MW 9	Kn 229
			L	*T 2-4:30	Kn 229
			L	†T 10-12:30	Kn 316
11	III	3	R	*W 2	Kn 231
			L	*TTh 10-12:30	Kn 239
15	VII	3	R	*TTh 11	Kn 229
			L	*W 2-4:30	Kn 115 & 229
22	XV	4	R	†TThS 9	Kn 231
			A	†M 2-4:30	Kn 117 & 231
			B	†T 2-4:30	Kn 117 & 231

Civil Engineering (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
23	VI	3	R	*MWF 10	Kn 231
(23)	VI	3	R	†MWF 11	Kn 231
27	XIX	4	R	*TThS 8	Kn 239
			L	*T 2-4:30	Kn 311
28	XIX	3	R	†TThS 8	Kn 239
31	XX	3	R	*MWF 1	Kn 231
33	V	4	R	*MWF 9	Kn 135
			L	*W 2-4	Kn 316 & 221
34	V	5	R	†MWF 9	Kn 135
			L	†MW 2-4	Kn 135 & 221
35	VII	3	R	*TTh 11	Kn 231
			L	*M 2-4:30	Kn 316
37	XI	3	R	*TTh 10	Kn 229
			L	*F 2-4:30	Kn 316
38	XI	3	R	†TTh 10	Kn 229
			L	†F 2-4:30	Kn 316
39	IX	4	R	*MW 10	Kn 229
			L	*F 10-12:30; T 2-4:30	Kn 316
40	VII	3	R	†TTh 11	Kn 229
			L	†T 2-4:30	Kn 316 & 113
41, 42, 43, 44	0	½		T 1	Kn 231

Dairy Husbandry (D H)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
5	I	3	R	*MW 8	Dy 201
			L	*M 1-3	Dy 201
23	XIX	3	R	*TTh 8	Dy 201
			L	*W 1-3	Dy 201
27	VII	3	R	*TTh 11	Dy 201
			L	*F 3-5	Dy 201
29	0			*Arr	Arr
30	XIII	4	R	†MW 11	Dy 201
			L	†TF 1-3	Dy 201
33	XX	1	L	*F 1-3	Dy 201
34	XX	1	L	†F 1-3	Dy 201
36	0	1	L	†F 1-3	Arr
60	0	2	R	†W 3-5	Dy 201
62	XV	2	R	†TTh 9	Dy 201
64	XIX	3	R	†TTh 8	Dy 201
			L	†W 1-3	Dy 201
65	XV	3	R	*TTh 9	Dy 201
			L	*W 3-5	Dy 201
66	VII	3	R	†TTh 11	Dy 201
			L	†F 3-5	Dy

Economics (Econ)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	XX	3	a	*MWF 8	Mo 304
			b	MWF 9	Mo 304
			c	MWF 10	Mo 304
			d	MWF 2	Mo 103
			e	TThS 8	Mo 304
			f	TThS 9	Mo 103
			g	TThS 10	Mo 304
			h	*MWF 10	Mo 105
			i	MWF 11	Mo 304
(2), (1)	I	3	R	MWF 8	Mo 105
3, (3)	X	3	a	MWF 9	Mo 105
			b	TThS 9	Mo 105
9	XXI	3	R	*MWF 2	Mo 211
25	VIII	3	a	*MWF 11	Mo 105
			b	*TThS 10	Mo 105
31, (31)	II	3	a	MW 9	Mo 211
			A	*T 2-4	Mo 301
				†F 2-4	Mo 301
			b	TTh 9	Mo 304
			B	WF 1	Mo 301
51	IV	3	a	*MWF 10	Mo 103
			b	*TThS 8	Mo 211
52	I	3	R	†MWF 8	Mo 207
53	XXII	3	a	*MWF 11	Mo 103
			b	*TThS 10	Mo 103
54	XIII	3	R	†MWF 11	Mo 103
55	V	3	R	*MWF 9	Mo 103
56	XXII	3	a	†MWF 9	Mo 103
			b	†TThS 10	Mo 103
63	XXI	3	R	*MWF 2	Mo 105
64	XXI	3	R	†MWF 2	Mo 105
66	V	3	R	†MWF 9	Mo 207
73	XI	3	R	*TThS 10	Mo 201
74	XI	3	R	†TThS 10	Mo 201
151, 152	0	3	R	MW 3-4:30	Mo 201

Education (Educ)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
41, 42	XIV	3	a	MWF 8	Mk 9
			b	MWF 9	Mk 9
			c	MWF 10	Mk 9
			d	MWF 11	Mk 9
			e	MWF 1	Mk 9
(41)	V	3	R	†MWF 9	Mk 6
(42)	XIII	3	R	*MWF 11	Mk 6
(52), 52	XII	3	a	TThS 9	Mk 9
			b	TThS 10	Mk 9
			c	*TThS 11	Mk 9

Education (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
(58)	O	4	R	*TThS 9	Mk 7
			A	*M 1-3	Mk 7
			B	*W 1-3	Mk 7
58	O	4	a	†TThS 9	Mk 7
			b	†TThS 10	Mk 7
			A	†T 1-3	Mk 7
			B	†Th 1-3	Mk 7
(63)	O	3		†W 4-6	Mk 14
(94), 94	O	12		Arr	Arr

Electrical Engineering (E E)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1	VI	3	a	*TTh 11	Kn 103
			b	*WF 1	Kn 103
			A	*M 10-12	Kn 105
			B	*M 2-4	Kn 105
			C	*W 10-12	Kn 105
			D	*F 10-12	Kn 105
2	VI	4	a	†TThS 11	Kn 103
			b	†MWF 1	Kn 103
			A	†M 10-12	Kn 105
			B	†M 2-4	Kn 105
			C	†W 10-12	Kn 105
			D	†F 10-12	Kn 105
3	XV	3	R	*TThS 9	Kn 103
4	IX	3	R	†MWF 10	Kn 103
5	IX	3	R	*MWF 10	Kn 248
7, 6	XV	4	R	TThS 9	Kn 248
			A	T 10-12:30	Kn 249
			B	T 2-4:30	Kn 249
12	XX	2	R	†WF 1	Kn 248
15, 16, 17, 18	O	0		Arr	Arr
23	IV	2	A	*Th 10-12:30	Kn 105
			B	*Th 2-4:30	Kn 105
			C	*F 2-4:30	Kn 105
24	IV	2	A	†T 10-12:30	Kn 105
			B	†T 2-4:30	Kn 105
			C	†Th 2-4:30	Kn 105
25	II	4	A	*T 10-12:30	Kn 105
			B	*T 2-4:30	Kn 105
31	IX	4	R	*MWF 10	Kn 103
			A	*T 8-10	Kn 105
			B	*Th 8-10	Kn 105
(33)	XIV	4	R	†TThS 11	Kn 135
			A	†W 1-3	Kn 105
			B	†W 3-5	Kn 105
			C	†F 1-3	Kn 105
			D	†F 3-5	Kn 105

Electrical Engineering (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
37, 38	I	4	R	MWF 8	Kn 103
			A	*W 2-4:30	Kn 105
			A	†Th 10-12:30	Kn 105
			B	Th 2-4:30	Kn 105
			C	S 10-12:30	Kn 105
45	XIII	3	R	*MWF 11	Kn 248
51-52	XVI	3	R	MW 11	Kn 103
			A	W 2-4:30	Kn 250
			B	F 2-4:30	Kn 250
58	V	4	R	†MWF 9	Kn 248
			A	†M 2-4:30	Kn 249
			B	†W 2-4:30	Kn 249
59	IX	4	R	*MWF 10	Kn 223
			L	*M 2-4:30	Kn 249
60	XIII	4	R	†MWF 11	Kn 248
			L	†F 2-4:30	Kn 248
(70), 70	XIII	2-4	A	M 2-4:30	Kn 249
			B	T 2-4:30	Kn 249
76	XII	4	A	†M 2-4:30	Kn 105
			B	†T 2-4:30	Kn 105
78	XIX	4	R	†TThS 8	Kn 248
			A	†Th 10-12:30	Kn 250
			B	†S 10-12:30	Kn 250

English (Engl)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
A	O	0	a	MWF 8	Mk 215
			b	*MWF 10	Mk 26
			c	*MWF 11	Mk 216
			d	*MWF 2	Mk 206
			e	*TThS 8	Mk 26
			f	*TThS 9	Mk 208
(1)	XXII	3	a	†MWF 10	Mk 26
			b	†MWF 11	Mk 216
			c	†MWF 2	Mk 206
			d	†TThS 8	Mk 26
			e	†TThS 9	Mk 208
1-2	XXII	3	a	MWF 8	Mk 206
			b	MWF 8	Mk 208
			c	MWF 8	Mk 16
			d	MWF 8	Mk 26
			e	MWF 9	Mk 208
			f	MWF 9	Mk 26
			g	MFW 9	Mk 215
			h	MWF 9	Mk 216
			i	MWF 10	Mk 208
			j	MWF 10	Mk 215
			k	MWF 10	Co 104
			l	MWF 10	Mk 216
			m	MWF 11	Mk 215
			n	MWF 11	Mk 208

English (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2 (continued)	XXII	3	o	MWF 11	Mk 203
			p	MWF 11	Mk 206
			q	MWF 12	Mk 215
			r	MWF 2	Mk 26
			s	MWF 2	Mk 216
			t	MWF 2	Mk 16
			u	MWF 2	Mk 203
			v	MWF 3	Mk 215
			w	TThS 8	Mk 208
			x	TThS 8	Mk 206
			y	TThS 8	Mk 203
			z	TThS 8	Mk 215
			aa	TThS 9	Mk 16
			bb	TThS 9	Mk 215
			cc	TThS 9	Mk 216
			dd	TThS 10	Mk 203
			ee	TThS 10	Mk 206
			ff	TThS 11	Mk 206
13, 14	IV	3	a	MWF 9	Mk 16
			b	MWF 11	Mk 16
			c	TThS 8	Mk 16
15, 16	VI	3	a	MWF 8	Mk 304
			b	MWF 10	Mk 302
			c	MWF 2	Mk 304
			d	TThS 9	Mk 304
22	O	3	R	†MWF 10	Mk 14
23, (23)	O	2	a	MW 8	Mk 212
			b	*MW 9	Mk 212
			c	TTh 8	Mk 212
25-26	O	3	a	MWF 8	Mk 203
			b	MWF 2	Mk 208
			c	TThS 9	Mk 203
27	XXI	3	R	*MWF 2	Mk 215
33, 34	XX	3	R	MWF 1	Th 308
35, (35)	O	3	a	MWF 9	Th 308
			b	MWF 10	Th 301
			c	MWF 11	Th 301
			d	†MWF 2	Th 308
			e	TThS 9	Th 308
			f	TThS 9	Th 301
			g	TThS 10	Th 308
(36)	XXI	3	R	*MWF 2	Th 308
39, (39)	XIII	3	R	MWF 11	Th 308
43, 44	V	3	R	MWF 9	Mk 206
45	XIX	3	R	*TThS 8	Mk 6
47, 48	O	3	R	M 1	NH 3
			L	WF 1-3	NH Stage
55, 56	XIII	3	R	MWF 11	Mk 212
57, 58	XIV	3	a	MWF 10	Mk 203
			b	TThS 10	Mk 16

English (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
61, 60	V	3	R	MWF 9	Mk 203
63, 64	I	3	R	MWF 8	Mk 216
65, 66	IX	3	R	MWF 10	Mk 206
71, 72	XIX	3	R	TThS 8	Mk 216
73, 74	XV	3	R	TThS 9	Mk 14
(75)	X	3	R	†MWF 3	Mk 206
83, 84	XXI	3	R	MWF 2	Mk 212

English Education (Engl-Ed)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
91	XV	3	R	*TThS 9	Mk 303

Entomology (Ent)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
2	VII	3	R	†TTh 11	Ne 205
			A	†M 3-5	Ne 21
			B	†F 3-5	Ne 21
41	IX	3	R	*MW 10	Ne 21
			L	*T 2-4	Ne 21
54	XV	3	R	†TTh 9	Ne 21
			L	†W 3-5	Ne 21
56		2	R	†F 8	Ne 21
			L	†S 10-12	Ne 21
57-58		4		Arr	Ne 21
59-60		1-3		Arr	Ne 21

Forestry (For)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1	XI	3	R	*TTh 10	For
			L	*F 1-3	For
25		2		*Arr	For
26	XIX	3	R	†TTh 8	For
			L	†W 1-3	For
(27)	XV	3	R	†TTh 9	For
			L	†W 3-5	For
28	IX	4	R	†MW 10	For
			L	†T 2-6	For
29-30	VII	3	R	TTh 10	For
			L	F 1-3	For
31, 32	XV	4	R	TTh 9	For
			L	W 3-5	For
33	I	3	R	*MW 8	For
			L	*M 1-3	For
34		3		*Arr	For
35, 36	O	3		Arr	For
(37)	V	3	R	†TTh 9	For
			L	†M 3-5	For
39-40	XI	4	R	TTh 10	For
			L	F 1-5	For
43	XV	3	R	*TTh 9	For
			L	*W 3-5	For
44	I	3	R	†MWF 9	For

Forestry (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
55, 56	V	4	R	MW 9	For
			L	M 1-5	For
57	VII	4	R	*TTh 11	For
			L	*T 2-6	For
64		3		†Arr	Arr

French (Fr)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	XVI	3	a	MWF 9	Mk 201
			b	MWF 11	Mk 201
			c	MWF 8	Mk 201
			d	TThS 10	Mk 24
			e	TThS 9	Mk 201
3-4	XVI	3	a	MWF 11	Mk 24
			b	TThS 9	Mk 24
			c	TThS 11	Mk 24
5-6	XVI	3	R	MWF 10	Mk 24
13-14	XI	3	R	TTh 10	Mk 26
			L	MTWThF 1	Mk 116
53-54	V	3	R	MWF 9	Mk 24
61-62	XI	3	R	MTWThFS 10	Mk 201

Geography (Geog)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	X	2	a	MF 8	Co 103
			b	TTh 10	Co 103
3	IX	3	R	*MWF 10	Co 101
4	IX	3	R	†MWF 10	Co 103
5	XV	3	R	*TThS 9	Co 101
10	XV	3	R	†TThS 9	Co 101
21, 22	VII	2	R	TTh 11	Co 103
57, (57)	O	1-5		Arr	Arr

Geology (Geol)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	II	4	a	MWF 9	Co 103
			b	MWF 11	Co 103
			c	TThS 8	Co 103
			A	M 2	Co 108
			B	T 10	Co 108
			C	T 2	Co 108
			D	W 1	Co 108
			E	W 3:30	Co 108
			F	Th 2	Co 108
			G	F 2	Co 108
7	XV	2	R	*TTh 9	Co 103
25-26	XV	3	R	TTh 9	Co 2
			A	T 2	Co 1
			B	W 2	Co 1
31	XIX	4	R	*TThS 8	Co 101
			L	*T 2	Co 101
32	XIX	3	R	†TTh 8	Co 101
			L	†T 2	Co 101

Geology (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
33	I	4	R	*MWF 8	Co 101
			L	*M 2	Co 101
34	I	3	R	†MW 8	Co 2
			L	†M 2	Co 1
42	XI	2	R	†T 10	Co 2
			A	†Th 2	Co 2
			B	†F 2	Co 2
51-52	XIII	3	R	MW 11	Co 2
			L	F 2	Co 10
53-54	V	3	R	MWF 9	Co 2
57, (57)	O	1-5		Arr	Arr

German (Ger)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	III	3	a	TThS 10	Mk 210
			b	MWF 10	Mk 210
			c	MWF 2	Mk 210
			d	TThS 8	Mk 210
			e	MWF 10	Mk 6
3-4	III	3	a	MWF 9	Mk 210
			b	MWF 8	Mk 210
5-6	XIX	3	R	TThS 8	Mk 24

Government (Gov)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1, 2	XIV	3	a	MWF 9	Mo 202
			b	MWF 11	Mo 202
			c	TThS 8	Mo 202
7, 8	XII	3	a	MWF 8	Mo 202
			b	TTS 9	Mo 202
14	XV	3	R	†TThS 9	Mo 207
15	XI	3	R	*TThS 10	Mo 211
16	XIII	3	R	†MWF 11	Mo 211
17	XV	3	R	*TThS 9	Mo 201
51	O	3	R	*WF 1:30-3:30	Mo 207
52	V	3	R	†MWF 9	Mo 9
55, 56	XIII	3	R	MWF 11	Mo 301
57	XV	3	R	*TThS 9	Mo 207
59	O	3	R	*TThS 10	Mo 207
‡(60), 60	O	4		Arr	Arr
65, 66	O	3		Arr	Arr
68	XI	3	R	†TThS 10	Mo 207
108	O	3		†Arr	Arr

Greek (Gk)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	XI	3	R	TThS 10	Mk 21

History (Hist)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1, 2	VI	3	a	MWF 8	De 302
			b	MWF 9	De 302
			c	MWF 10	De 302
			d	MWF 11	De 302

History (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1, 2	VI	3	e	MWF 12	De 302
(continued)			f	MWF 2	De 302
			g	MWF 3	De 302
			h	TThS 8	De 302
			i	TThS 9	De 302
			j	TThS 10	De 302
			k	TThS 11	De 302
			l	TTh 2-3:30	De 302
7, 8	VIII	3	R	MWF 11	Mk Aud
9, 10	IX	3	R	MWF 10	De 305
11, 12	XI	3	R	TThS 10	De 22
13	XV	3	R	*TThS 9	De 305
14	XV	3	R	†TThS 9	De 305
19, 20	XI	3	R	TThS 10	De 305
21, 22	V	3	R	MWF 9	De 305
31, 32	XV	3	R	TThS 9	Mk 212
51, 52	III	3	R	TTh 4-5:30	De 305
65, 66	XIX	3	R	TThS 8	De 305
71, 72	VI	3	R	MWF 12	De 305
83, 84	I	3	R	MWF 8	De 305
113, 114	O	3		Arr	
123, 124	O	3		Arr	

History Education (Hi-Ed)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
91	O	3	R	*TTh 2-3:30	De 21

Home Economics (H Ec)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
2	XIX	2	R	†TTh 8	Pe 305
3	III	3	R	*WF 1	Pe 308
			L	*M 1-3	Pe 308
6	III	3	L	†TTh 1-4	Pe 304
10	XX	2	R	†WF 1	Pe 212
15-16	VIII	3	R	T 4	Pe 212
			A	*WF 8-10	Pe 211
			B	TTh 10-12	Pe 211
			C	TTh 2-4	Pe 211
			D	†WF 2-4	Pe 211
21, 22	O		R	M 10	Pe 211
			L	M 11-1	Pe 211
25-26	III	3	R	MF 1	Pe 201
			L	Arr	
31	II	3	R	*MWF 9	Pe 305
32	XVIII	3	L	†MWF 3-5	Pe 304
33	II	3	R	*MW 2-3:30	Pe 305
35, (35)	XXI	3	2 lec.	Arr	E.D.H.
			L	Arr	
41	V	3	R	*MWF 9	Com
43-44	O	2	L	Arr	Com

Home Economics (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
46	XV	3	R	†TTh 9	Pe 308
			L	†S 9-11	Pe 308
48	O	3		†Arr	Arr
‡49-50	O		R	T 1	Com
			L	Arr	Com
60	IV	3	L	†WF 9-12	Pe 304
61	III	3	L	*TTh 2-5	Pe 304
63	XV	3	L	*TTh 9-12	Pe 304
(64)	V	3	R	*M 9	Pe 308
			L	*WF 9-11	Pe 308
65	XX	3	R	*MWF 1	Pe 305
66	XI	2	L	†TTh 10-12	Pe 304
68	XX	3	R	†MWF 1	Pe 305
69, (69)	O	3		Arr	Arr
71	XXI	2	R	*M 2	Pe 211
			L	*M 3-5	Pe 211
72	I	3	R	†WF 8	Pe 211
			L	†M 8-10	Pe 211
73	IX	3	R	*MW 10	Pe 305
			L	*Th 2-4	Pe 212
74	V	3	R	†WF 9	Pe 212
			L	†Th 2-4	Pe 212
76		3		†Arr	Pe 212
81, 82		1-3		Arr	Arr
83	V	3	R	*MWF 9	Pe 212
84	O	2		†Arr	Arr

Home Economics Education (HE-Ed)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
91	XIII	3	R	*MWF 11	Pe 212
93	I	3	R	*MWF 8	Pe 212
94	O	6		†Arr	Arr
96	O	3		†Arr	Arr
98	O	3		†Arr	Arr

Horticulture (Hort)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
2	III	2	R	†T 3	Ne 314
			L	†T 1-3	Ne 314
13	XI	2	L	*TTh 10-12	G H
14	XI	3	R	†TTh 10	Ne 314
			L	†F 1-3	G H
27	XIX	3	R	*TTh 8	Ne 314
			L	*W 1-3	Ne 314
37	III	1	L	*Th 1-3	G H
40	XXI	3	R	†M 2, W 1	Ne 314
			L	†W 2-4	G H
44	O	1-5		†Arr	Arr
46	O	3	R	†TTh 8	Ne 314
			L	†W 1-3	Ne 314
48	O	2	R	†T 8	Ne 314
			L	†W 1-3	Ne 310

Horticulture (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
51, 52	O	1-3		Arr	Arr
53	V	3	R	*MWF 9	Ne 314
54	VII	2	R	†TTh 11	Ne 314
55	III	2		*Th 1-5	Ne 314
57	X	2	L	*MW 3-5	Ne 310
58	VII	2		†TTh 11	Ne 314
59	XV	3	R	*TTh 9	Ne 314
			L	*W 3-5	G H
65	XIX	3	R	*TTh 8	Ne 310
			L	*W 1	G H
66		2		†Arr	Ne 314
78		3		†Arr	Ne 314
91, 92	III	1	R	T 4	Ne 314
94	VII	3	R	†TTh 11	Ne 319
			L	†F 3-5	G H
103	III	2		*T 1:30-3:30	Ne 308

Hotel Administration (H Ad)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1	O	½	R	*TTh 9	Co 104
5	XVI	3	R	*MWF 9	Co 104
6	XVI	2	R	†MF 9	Co 104
(12)	O	2	R	*W 2-4	Co 101
26	I	3	R	†MF 8	Co 104
			A	†Th 2-4	Co 101
			B	†F 10-12	Co 101
27	O	1	R	*T 1-4	Mk 26
40, 42					
44, 46	O	½	R	†T 2	Mk Aud

Humanities (Hu)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	XX	3	All sec	M 1	Mk Aud
			a	MWF 9	Mk 14
			b	MWF 11	Mk 14
			c	MWF 3	Mk 14
			d	TThS 9	Mk 302
			e	TThS 11	Mk 216

Human Relations (H R)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1, (1)	XX	3	a	MWF 9	Co 207
			b	TThS 8	De 304

Italian (Ital)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	XIX	3	R	TThS 8	Mk 21

Languages (Lang)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1, 2	IX	3	R	MWF 10	Mk 16
51, 52	XXI	3	R	MWF 2	Mk 201
73	XIII	3	R	*MWF 11	Mk 201

Languages-Education (Lang-Ed)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
91	XIX	3	R	TThS 8	Mk 8

Latin (Lat)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	XV	3	R	TThS 9	Mk 6
3-4	V	3	R	MWF 9	*Mk 6 †Mk 212

Liberal Arts (L A)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
51	V	3	All sec	M 7-9 p.m.	Co 207
			a	WF 9	*Co 101 †Mk 304
			b	WF 10	Mo 202
			c	TTh 11	Mk 6

Mathematics (Math)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
(2)	XVII	3	a	*MWF 9	De 211
			b	*MWF 11	De 105
			c	*MWF 1	De 211
2	XVII	3	R	†MWF 12	De 211
9	VIII	2	a	*TTh 12	De 101
			b	*TTh 1	De 101
			c	*TTh 12	De 112
11	XVII	3	a	*MWF 8	De 101
			b	*MWF 8	De 211
			c	*TThS 8	De 211
			d	*TThS 8	De 112
			e	*TThS 8	De 101
			f	*MWF 9	De 101
			g	*TThS 9	De 105
			h	*MWF 10	De 101
			j	*MWF 10	De 211
			k	*MWF 10	De 105
			l	*MWF 11	De 305
			m	*TThS 11	De 211
			n	*MWF 2	De 211
			p	*MWF 11	De 112
			q	*MWF 8	Kn 223
			r	*MWF 10	De 21
			s	*TThS 8	Mk 201
(11)	XII	3	a	†MWF 9	De 105
			b	†MWF 11	De 305
			c	†MWF 9	Co 101
13	XII	3	a	*MWF 8	De 112
			b	*MWF 8	De 105
			c	*TThS 8	De 105
			d	*TThS 8	Co 104
			e	*MWF 9	De 105
			f	*TThS 9	De 211
			g	*TThS 9	De 101
			h	*TThS 10	De 101
			j	*MWF 11	De 211
			k	*MWF 9	De 21

Mathematics (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
(13)	VIII	3	a	†TThS 9	Co 104
			b	†TThS 9	Kn 221
			c	†TThS 10	De 105
			d	†MWF 11	De 105
			e	†MWF 11	De 211
			f	†TThS 11	De 105
			g	†MWF 12	De 101
			h	†MWF 2	De 105
(14)	XII	3	a	*MWF 11	Co 104
			b	*TThS 11	De 112
14	XVII	3	a	†MWF 8	De 112
			b	†MWF 8	Mk 21
			c	†TThS 8	De 211
			d	†TThS 8	Co 104
			e	†TThS 9	De 105
			f	†MWF 10	De 101
			g	†MWF 10	De 112
			h	†MWF 10	De 105
			j	†TThS 8	Mk 201
(16)	XVII	3	R	*MWF 10	De 112
16	XII	3	a	†MWF 8	De 105
			b	†MWF 8	Co 101
			c	†TThS 8	De 105
			d	†TThS 8	De 112
			e	†MWF 9	De 101
			f	†TThS 9	Ja 102
			g	†TThS 9	De 101
			h	†TThS 10	De 101
			j	†MWF 9	Kn 231
17	XVII	3	a	*MWF 8	Mk 21
			b	*MWF 8	Ja 102
			c	*TThS 8	Ja 205
			d	*MWF 9	Ja 102
			e	*TThS 9	Kn 133
			f	*TThS 10	De 211
			g	*MWF 8	Co 104
			h	*TThS 8	Ja 102
(17)	XVII	3	a	†MWF 10	De 211
			b	†MWF 9	Kn 103
(18)	XVII	3	R	*TThS 10	De 105
18	XVII	3	a	†MWF 8	Mk 24
			b	†MWF 8	De 101
			c	†TThS 8	Ja 205
			d	†MWF 9	De 211
			e	†TThS 9	De 211
			f	†TThS 10	De 112
			g	†MWF 8	Mk 6
			h	†TThS 8	Mk 6
19, 20	XII	3	a	TThS 8	De 208

Mathematics (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
			b	MWF 11	Ja 205
			c	TThS 9	Kn 229
(19)	XII	3	R	†MWF 9	Kn 223
30	II	3	a	†MWF 8	De 211
			b	†MWF 11	De 112
32	V	3		†MWF 9	De 208
34	VII	3	R	†TThS 11	De 208
38	O	3		Arr	Arr
40	XI	3	R	†TThS 10	De 211
43-44	XI	3	R	TThS 10	De 208
‡46	XIII	1	R	†W 11	De 208
47-48	XIII	3	R	MWF 11	De 101
49	VII	3	R	*TThS 11	De 105
61-62	XV	3	R	TThS 9	De 112
65-66	V	3	R	MWF 9	De 112
85-86	IX	3		MWF 10	Kn 236
101-102	IX	3	R	MWF 10	De 208
103	I	3	R	*MWF 8	De 107
104	XIX	3	R	†TThS 8	De 101
105-106	XIII	3	R	MWF 11	Arr
107-108				Arr	Arr
109	XIX	3	R	*TThS 8	De 107
110	I	3	R	†MWF 8	De 208
111-112	XV	3	R	TThS 9	De 208
113-114				Arr	Arr
117				*Arr	Arr

Mathematics-Education (Math-Ed)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
91	IX	3	R	*MWF 10	Co 101

Mechanical Engineering (M E)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	X	2	A	TTh 10-12:30	Kn 313
			B	TTh 10-12:30	Kn 306
			C	TF 2-4:30	Kn 306
			D	*TF 2-4:30	Kn 308
			E	MW 2-4:30	Kn 306
			F	MF 10-12:30	Kn 306
			G	MF 10-12:30	Kn 313
			H	MF 10-12:30	Kn 308
			J	*MW 2-4:30	Kn 308
3	XIV	2	L	*TTh 10-12:30	Kn 301
(4)	XIV	3	a	*M 1	Kn 301
			b	*M 1	Kn 306
			A	*TF 2-4:30	Kn 301
			B	*TF 2-4:30	Kn 306
4	XIV	3	R	†M 1	Kn 301
			L	†TTh 10-12:30	Kn 301
7-8	XXII	4	a	TThS 9; M 1	Kn 135
			b	TThS 8; W 1	Kn 223

Mechanical Engineering (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
	XXII	3	a	*MWF 8	Kn 229
			b	*MWF 11	Kn 135
10	XXII	4	a	†MWF 8	Kn 229
			b	†MWF 11	Kn 135
			A	†W 2-4:30	Kn 120
			B	†F 2-4:30	Kn 120
11, 12	VIII	2	A	MW 2-4:30	M S or
			B	TF 2-4:30	F S
15-16	XVIII	3	R	S 10	Kn 308
			L	TTh 10-12	Kn 308
19	XIV	3	R	*TTh 11	Kn 223
			A	*M 2-4:30	Kn 120
			B	*T 2-4:30	Kn 120
			C	*F 2-4:30	Kn 120
20	XIV	2	A	†TTh 10-12:30	Kn 120
			B	MW 2-4:30	Kn 120
21	XIII	3	R	*MWF 11	Kn 221
23-24	II	3	a	MWF 8	Kn 221
			b	MWF 9	Kn 221
			c	MWF 10	Kn 221
27	XVI	1	A	*M 10-12:30	Kn 112 & 135
			B	*F 10-12:30	Kn 112 & 135
			C	*S 10-12:30	Kn 112 & 135
28	XVI	1	A	†M 2-4:30	Kn 112 & 135
			B&C	†F 2-4:30	Kn 112 & 135
29	III	2	A	*MW 2-4:30	Kn 112 & 223
			B	*TF 2-4:30	Kn 112 & 223
			C	*M 2-4:30; S 10-12:30	Kn112 &221
30	III	2	A	†MW 2-4:30	Kn 112 & 223
			B	†TTh 10-12:30	Kn 112 & 223
			C	†TF 2-4:30	Kn 112 &221
31, (31)	O	2	L	Arr	F S
(32), 32	O	2	L	Arr	M S
39	XV	2	R	*TTh 9	Kn 221
40	IX	3	R	†MW 10	Kn 133
			L	†W 1:30-4	Kn 133
51	II	2	A	*MT 2-4:30	Kn 112 or 135
			B	*MW 2-4:30	Kn 112 or 135
			C	*MF 2-4:30	Kn 112 & 135
53	IX	2	R	*MF 10	Kn 133
54	XXI	3	R	†S 9	Kn 133
			L	†MW 2-4:30	Kn 308
55-56	X	3	R	TTh 9	Kn 223
			A	T 2-4:30	Kn 132 or 133
			B	*W 2-4:30 †Th 2-4:30	Kn 132 or 133
			C	F 2-4:30	Kn 132 or 133
59, 60, 61, 62	O	0		T 1	Kn 236
65, 66	XXII	3	a	TThS 8	Kn 236
			b	†TThS 9	Kn 236

Music (Mus)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
‡1, (1)	O	½		MTh 4-5:30	Th 301
‡(2), 2	O	½		T 4-5:30; Th 7-8:30 p.m.	Th 301
‡3M,(3M)	O	½		TF 4-5:30	Bal 2
‡3W,(3W)	O	½		TTh 4-5:30	P R
‡5, (5)	O	½		MTh 4-5:30	Bal 2
‡(6),6	O	½	R	W 4, Th 2	Th 301
‡7, (7)	O	½		Arr	Bal 101
9-10	I	1	R	M-F 8	Th 301
11-12	XIII	2	R	MWF 11	Bal 2
13-14	XV	1	R	TTh 9, F 1	Bal 2
15-16	V	2	R	MWF 9	Bal 2
33-34	XII	2	R	MW 2-3:30	Bal 2
(33)	XII	2	R	†TF 2-3:30	Bal 2
41-42	I	1	R	MW 8	P R
43	XIX	2	R	*TTh 8	Bal 2
45, 46	VII	2	R	TTh 11	Bal 2
47, 48	O	1	R	MW 2	Arr
51-52		2	R	Arr	Arr
80	XI	2	R	†TTh 10	Bal 2
(83)	IX	2	R	†MF 10	Bal 2
97-98	XX	2	R	MW 1	P R

Music-Education (Mu-Ed or Ed-Mu)

Mu-Ed

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
(91)	IX	3	R	†MWF 10	P R
			L	†T 2	P R
(92)	XIII	3	R	*MWF 11	P R
95	XX	2	R	*MW 1	Th 301

Music-Education — Mu-Ed (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
(96)	O	2	R	*TTh 11	Th 301
97	O	2	R	*TTh 10	Th 301

Ed-Mu

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
(93)	O	3-6		†Arr	Arr
94	O	3-6		†Arr	Arr

Applied Music (A-Mus)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
‡23, (23)	O	1-2		Arr	Arr
‡(24), 24	O	1-2		Arr	Arr
‡25, (25)	O	1-2		Arr	Arr
‡(26), 26	O	1-2		Arr	Arr
‡27, (27)	O	1-2		Arr	Arr
‡(28), 28	O	1-2		Arr	Arr
‡29, (29)	O	1-2		Arr	Arr
‡(30), 30	O	1-2		Arr	Arr

Occupational Therapy (O T)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1	XIX	3	L	*TTh 8-10	He 210
2	I	3	L	†MWF 8-10	He 211
(5)	I	3	L	†MWF 8-10	He 211
(6)	IX	3	L	*MWF 10-12	He 209
(10)	I	2	L	*MF 8-10	He 107
41, 44	XXI	3	R	MWF 2	He 213
46	X	3	R	†MWF 4	He 213
49, 50	XXII	2	R	M 7-9 p.m.	He 213

Philosophy (Phil)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1, 2	XIII	3	R	MWF 11	Mk 26
4	XV	3	R	†TThS 9	Mk 26
13, 14	XI	3	R	TThS 10	Mk 6
19	XV	3	R	*TThS 9	Mk 26
55, 56	IX	3	R	MWF 10	Mk 304

Physical Education — Men (P E - M)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
23	IX	3	R	*MWF 10	N H 3
(45)	XIII	2		†MWF 11	N H 3
46	IX	2		†MWF 10	F H
47	IX	2		*MWF 10	F H
(48)	XIII	2		*MWF 11	F H
(61)	V	3	R	†MWF 9	N H 11
(63)	XV	2	R	†TTh 9	F H
65	V	3	R	*MWF 9	F H

Education — Physical Education (Ed-PE)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
93, (93)	O	2-4		Arr	Arr

P E Activities — Men

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
31, 32	O	½	A	MW 9	F H
			B	MW 10	F H
			C	MW 11	F H

P E Activities — Men (continued)

Register for one section only.

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
			D	MW 2	F H
			E	MW 3	F H
			F	TTh 9	F H
			G	TTh 10	F H
			H	TTh 11	F H
			I	TF 2	F H
			J	TF 3	F H

Physical Education — Women (P E - W)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
24	IX	3	R	†MWF 10	N H 2
(36)	XV	3	R	*T 9, Th 8-10	N H 2
53, 54	X	2	R	MW 3	N H 11
			L	Arr	
55	V	3	R	*MWF 9	N H 11
56	XIII	3	R	†MWF 11	N H 11
63, 64	XI	2	R	TTh 10	N H 11
(66)	XIII	3	R	*MWF 11	N H 11
73	XI	1-2	R	*TTh 10	N H 2
			L	*Arr	
74	IX	1-2	R	†MF 10	N H 11
			L	†MW 2	N H 11

Physical Education — Education (PE-Ed or Ed-PE)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
91	IX	3	R	*MWF 10	N H 11
(96), 96	O	3	R	W 10	N H 11
			L	Arr	

(Ed-P E)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
92	O	3-6	R	†W 10	N H 11
			L	†Arr	

P E Activities — Women

Dept.-No.	Sec.	Time	Room
1, 2 (Fr.)	A	TTh 11	App. & Gym.
3, 4 (So.)	B	MF 9	Archery
5, 6 (Jr.)	C	MF 10	Archery
	D	MF 11	Archery
	E	MW 2	Archery
	F	TTh 9	Archery
	G	TTh 10	Archery
	H	MF 9	Badminton (int.)
	I	MF 11	Badminton
	J	TTh 9	Badminton
	K	MW 4	Dance Workshop
	L	MW 9	Golf
	M	MW 10	Golf
	N	MW 11	Golf
	O	MW 3	Golf
	P	TTh 9	Golf

(Sec. A for Senior Majors)

Note: Sign up for first and second semesters, but do not indicate second semester activity. Register for one activity, but list a second and third choice.

P. E. Activities — Women (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
			Q	TTh 10	Golf (int.)
			R	MF 9	Hockey
			S	MW 2	Hockey
			T	TTh 11	Hockey
			U	TTh 11	Individuals
			V	TTh 10	Modern Dance
			W	TTh 3	Modern Dance
			X	MF 11	Riding-beg.
			Y	MF 2	Riding-beg.
			Z	TTh 2	Riding-beg.
			AA	TTh 3	Riding-beg.
			BB	MF 10	Riding-elem.
			CC	M 3-5	Riding-elem.
			DD	T 10-12	Riding-elem.
			EE	TTh 4	Riding-elem.
			FF	F 3-5	Riding-elem.
			GG	Th 10-12	Riding-int.
			HH	MF 4	Riding -colt tr.
(Sec. II for Junior Majors)			II	T 3, Th 10	Stunts & Tumbling
			JJ	TTh 11	Touch Football
			KK	MF 9	Tennis
			LL	MF 10	Tennis
			MM	MW 2	Tennis
			NN	MW 3	Tennis
			OO	TTh 9	Tennis
			PP	TTh 10	Tennis
			QQ	TTh 11	Tennis
			RR	TTh 2	Tennis
			SS	TTh 3	Tennis
(Sec. UU for			TT	WF 2	Tennis
Soph. Majors)			UU	TTh 3	Tennis-int.
			VV	TTh 9	Tennis-int.
			WW	TTh 11	Tennis-int.
			XX	TTh 2	Tennis-int.

Physical Science (Ph Sci)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	XXI	4	R	MWF 2	Co 103
			A	W 10-12:30	Co 108
			B	Th 10-12:30	Co 108

Physics (Phys)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	X	4	Lec	WF 11	De 209
			a	M 11	De 21
			b	T 8	De 22
			c	T 9	De 22
			A	M 2-4	De 27
			B	T 2-4	De 27

Physics (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
9, (9)	X	4	Lec	M 11	De 209
			R	WF 11	De 21
			L	W 1-3	De 27
21-22	X	6	Lec I	TTh 9	De 209
			Lec II	TTh 10	De 209
			a	MWF 8	De 17
			b	MWF 8	De 22
			c	MWF 9	De 22
			d	MWF 9	De 17
			e	MWF 10	De 17
			f	MWF 11	De 17
			A	M 2-5	De 110
			B	T 2-5	De 110
			C	W 2-5	De 110
			D	F 2-5	De 110
(21)	X	6	R	†M-F 9	De 21
			L	†S 9-12	De 110
43-44	O	1	L	Th 9-12	De 27
(64), 64	XXI	3	R	M 1	De 22
			L	M 2-5	De 23
81, 82	XVIII	4	R	MWF 11	De 22
			L	F 2-5	De 13
83-84	IX	4	R	MWF 10	De 22
			L	T 2-5	De 23
85-86	II	3	R	TThS 10	De 17
91-92	XV	3	R	TThS 9	De 17
93-94	XI	3	R	TThS 10	De 21
95-96	O	2	L	TW 2-5	De 18
(97)	IX	4	R	†MWF 10	De 21
111-112	XIX	3	R	TThS 8	De 17
115-116	I	3	R	MWF 8	De 21
117-118	XIX	3	R	TThS 8	De 21
119-120	VII	3	R	TThS 11	De 17
(121)	XV	3	R	†TThS 9	De 21
123	XV	3		*TThs 9	De 21

Poultry Husbandry (P H)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
2	XV	3	R	†TTh 9	Ne 205
			L	†F 1-3	P F
6	XI	3	R	†TTh 10	Ne 220
			L	†W 1-3	P F
7	XIX	2	R	*T 8	Ne 220
			L	*T 1-3	P F
17	XV	3	R	*TTh 9	P F
			L	*W 3-5	P F
23, 24	O	2		Arr	P F
26	V	3	R	†MW 9	Ne 116
			L	†W 3-5	Ne 116
27, 28	O	1		F 1	Ne 324

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
Poultry Husbandry (continued)					
29	XI	3	R	*TTh 10	Ne 116
			L	*W 1-3	P F
53, 54	O	1-3		Arr	Arr
Psychology (Psych)					
1-2	XII	3	R	*TTh 10	Ne 116
			b	TThS 10	Co 201
			c	TThS 11	Co 207
			d	MWF 8	Co 201
			e	*TThS 8	Co 201
			f	*TThS 9	Co 207
			g	MWF 11	Co 207
32	VI	3	a	†MWF 10	Co 204
			b	†MWF 11	Co 204
47, (47)	XXI	3	a	MWF 9	Co 201
			b	TThS 9	Co 201
			c	MWF 11	Co 201
			d	*TThS 11	Co 201
48	XV	3	a	†TThS 9	Co 207
			b	†MWF 10	Co 207
51	XI	3	R	*TThS 10	Co 207
52	V	3	R	†MWF 9	Co 204
57	XXI	3	R	*MW 1-3	Co 204
58	I	3	R	†MWF 8	Co 204
63	V	3	R	*MWF 9	Co 204
67	VII	3	R	*TTh 11, F 2-4	Co 204
74	XI	3	R	†TThS 10	Co 207
78	XV	3	R	†TTh 9, T 2-4	Co 204
83	XIII	3	R	*MWF 11	Co 204
(89)	O	3	R	†S 10-12	Co 204
95	IX	3	R	*MWF 10	Co 204
98	O	3	R	†W 1-3	Co 204
105, 106	XI	3	R	T *9-11, †10-12	Co 204
			R	†M 11	Co 206C
110	XXII	3	R	†W 2-4	Co 207
114	III	3	R	†T 2-4	Co 204
121	XXI	3	R	*W 2-4	Co 207
123	X	3	R	*M 3-5, T 2	Co 204
131	O	3	R	*Th 2-4	Co 204
141	XXI	3	R	*F 2-4	Co 204
152	XXI	3	R	†M 2-4, T 4	Co 204
162	XXI	3	R	†F 2-4	Co 204
Reserve Officers Training Corps Army (M S)					
11-12	O	1½	a	MW 11	Pe 104
			b	MW 1	Pe 104
			c	TTh 9	Pe 104
			d	TTh 10	Pe 104
			e	TTh 11	Pe 104

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
Reserve Officers Training Corps. Army (M.S.) (continued)					
21-22	O	1½	a	TTh 8	Gar
			b	TTh 9	Gar
			c	TTh 11	Gar
			d	MW 11	Gar
31-32	O	3	a	MWF 8	Pe 104
			b	TThS 8	Pe 104
			c	MWF 10	Pe 104
			d	TThS 10	Dy 201
41-42	O	3	a	MWF 8	Pe 102
			b	TThS 10	Mo 202
Air Force (A S)					
15-16	O	1½	c	MW 2	Pe 102
			d	TTh 8	Pe 102
			e	MW 9	Pe 102
			f	MW 11	Pe 102
			g	MW 1	Pe 102
			h	TTh 9	Pe 102
			j	TTh 10	Pe 102
			k	TTh 11	Pe 102
25-26	O	1½	e	TTh 8	Gar
			f	MW 1	Gar
			g	TTh 10	Gar
			h	MW 10	Gar
			j	TTh 11	Gar
35-36	O	3	e	MWF 9	Gar
			f	TThS 8	Pe 7
			g	MWF 11	Gar
45-46	O	3	e	MWF 8	Gar
			f	MWF 10	Pe 102
			i	TThS 8	Mo 105

Drill Thursday: Freshmen & Sophomores 2-4; Juniors and Seniors 1-4

Secretarial Studies (Secl)					
‡1-2	VIII	3	R	M-F 8	Mo 3
‡3-4	XXII	3	R	M-F 1	Mo 3
‡5, (5)	O	1	L	M-F 10	Mo 2
‡7-8	VII	2	L	M-F 11	Mo 2
‡9-10	XXI	2	L	M-F 2	Mo 2
‡11	XV	2	R	*MWF 3	Mo 3 & 2
‡(13)	X	2	L	†M-F 3	Mo 1, 2, & 5
‡17	V	3	R	*MWF 9	Mo 3
‡(18), 18	O	3	L	Arr	Arr
‡22	O	3	R	†MWF 2	Mo 3
‡23-24	IX	3	R	MWF 10	Mo 3
‡27	VII	1	L	*M-F 11 (begins mid-sem.)	Mo 2

Sociology (Soc)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1	VIII	3	a	*MWF 8	De 304
			b	*MWF 9	Mk 302
			c	*MWF 10	Co 103
			d	*TThS 9	Mo 3
4	VIII	3	a	†MWF 8	De 304
			b	†MWF 9	Mk 302
			c	†MWF 10	Mo 301
			d	†MWF 11	Mk 302
33, 34	V	3	R	MWF 9	De 304
39	XV	3	R	*TThS 9	Ja 102
43	IX	3	R	*MWF 10	De 304
44	XII	3	a	†MWF 10	De 304
			b	†TTh 10:30-12	De 304
54	I	3	R	†MWF 8	De 206
71, 72	XIII	3	R	MWF 11	De 304
73, 74	XV	3	R	TTh 9-10:30	De 304
75	VII	3	R	*TTh 10:30-12	De 304
90	O	3	R	†T 2-4:30	De 206
92	O	3	R	†M 2-4:30	De 206
‡93	O	3	R	*T 2-4:30	De 206
95, 96	O	3	R	W 2-4:30	De 206
97	O	6	R	*M 2-4:30	De 21

Spanish (Sp)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
1-2	X	3	a	TThS 9	Mk 210
			b	MWF 9	Mk 21
			c	MWF 10	Mk 212
			d	TThS 11	Mk 21
			e	TThS 9	Mk 206
			f	MWF 11	Mk 21
3-4	X	3	a	MWF 10	Mk 21
			b	TThS 9	Mk 21
5-6	IX	3	R	MWF 10	Mk 8
13-14	V	3	R	MWF 9	Mk 8
65-66	XIII	3	R	MWF 11	Mk 8

Zoology (Zool)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
7, 8	IX	4	R	MW 10	Ne 220
			A	MW 1-3:30	*Ne 110; †Ne 107
			B	*MW 3:30-6	Ne 110
			C	*TTh 10-12:30	Ne 110
(8)	XIX	4	R	*TTh 8	Ne 116
			L	*F 1-3:30, S 9-11:30	Ne 107
17	XIII	4	R	*MWF 11	Ne 220
			A	*M 1-3:30	Ne 107

Zoology (continued)

Dept.-No.	Exam.	Cr.	Sec.	Time	Room
(continued)			B	*M 3:30-6	Ne 107
			C	*T 2-4:30	Ne 107
			D	*W 1-3:30	Ne 107
			E	*W 3:30-6	Ne 107
18	XX	3	R	†MWF 1	Ne 220
19	XVIII	3-4	a	*TTh 9	Ne 107
(Sec. a for				S 9	Ne 116
Phys. Ed.;			b	*TTh 11	Ne 107
Sec. bB for O.T.)				S 11	Ne 116
			B	*Th 2-4:30	Ne 107
20	XIII	4	R	†MWF 11	Ne 220
			A	†T 10-12:30	Ne 107
			B	†T 2-4:30	Ne 107
			C	†Th 10-12:30	Ne 107
			D	†Th 2-4:30	Ne 107
36	XX	3	R	†M 11	Ne 324
			L	†MW 1-3:30	Ne 324
48	V	3	R	†MW 9	Ne 220
			A	†T 2-4	Ne 113
			B	†T 4-6	Ne 113
51	I	4	R	*MW 8	Ne 220
			L	*F 2-5, S 10-12	Ne 110
56	Arr	3	R	†1 hr. arr	Ne 107
			L	†F 1-6	Ne 107
59	V	4	R	*MWF 9	Ne 108
			L	*M 2-4:30	Ne 108
60	V	5	R	†MWF 9	Ne 108
			L	†5 hrs. arr	
61, (61)	IX	3	R	MWF 10	Ne 116
64	VII	4	R	†TTh 10:30-12	Ne 110
			L	†Th 2-4:30	Ne 110
(65)	XIX	4	R	†TTh 8	Ne 220
			L	†MW 3:30-6	Ne 110
66	I	4	R	†WF 8	Ne 220
			L	†F 2-5, S 10-12	Ne 110
77	XV	5	R	*TThS 9	Ne 324
			L	*T 10-12:30; 2-4:30	Ne 324
87, 88	O	1	R	T 4:30-6	Ne 110
94	XV	5	R	†TThS 9	Ne 324
			L	†T 10-12:30, 2-4:30	Ne 324
111, 112	O	1-4		Arr	Ne 101
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